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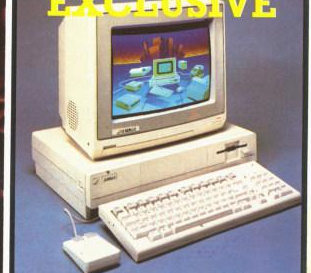

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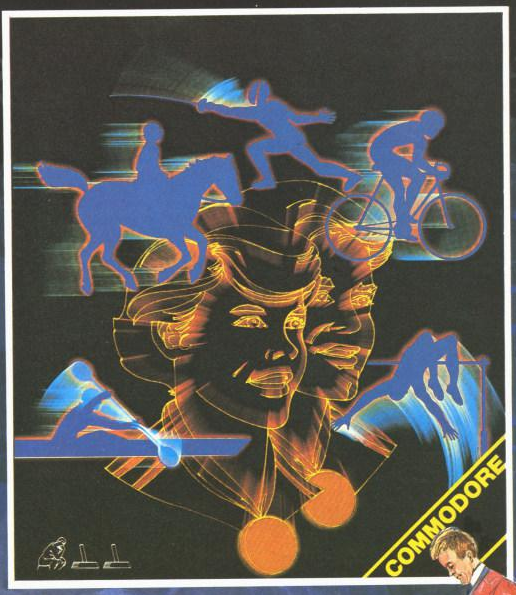
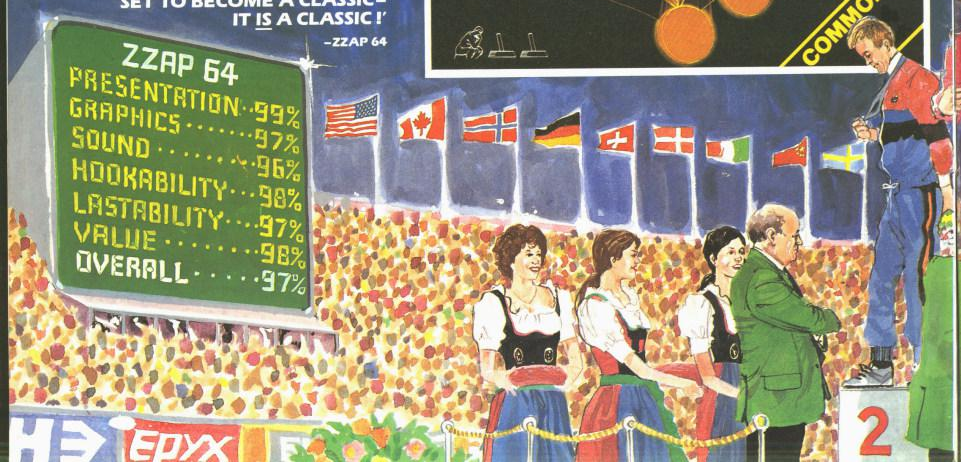
–ZZAP 64





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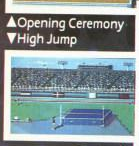

▲Opening Ceremony
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Screen shots as seen on the Commodore 64

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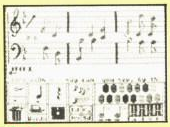

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Editorial

Commodore UK is showing a good deal of faith in the C128, and initial reactions from software houses and retailers seem to indicate that this faith is justified. However, it will take good marketing to make the C128 sell; although the price of the basic unit is reasonable, at £269, adding the 1571 disk drive and a colour monitor will bump up the price of the whole system. Buying a cheaper monochrome monitor would be one solution. Still the complete price of a C128 system will come nowhere near that of an Amiga. This wonder machine is bound to cost around £1000, and can only be aimed at the professional market. Memory expansions, extra disk drives and other peripherals will boost the cost of the system even further.

So Commodore has two potentially world-beating systems in the pipeline, one for the upper end of the mass market and one for the low-cost end of the pro market. The two aren't really competition — the cost factor alone will determine that — so perhaps Commodore UK's policy of keeping quiet about the Amiga, in case news of the machine harms the prospects of the C128, is unjustified. We hope this issue's taster for the Amiga, and C128 competition, emphasise our commitment to both systems.

Next Month

Big Show Issue!
Guide to all the exhibitors

Treat your 64
Presents for your micro

Plus
Great contests, news and reviews

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ABC

SUBMITTING ARTICLES *Commodore Horizons* invites readers' contributions, either program listings or articles. Articles should be typed, double spaced with a wide margin. When possible programs should be submitted on cassette or disk with a printout on plain white paper. Please keep a copy of your submission — do not send your only copy. Please enclose an s.a.e. if you wish your submission to be returned. All submissions must be your own original work.

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Commodore 128

Superscript — The Intelligent Word Processor

"If you need a sophisticated and powerful word processor . . . this is the ultimate."
Trevor Doherty, Commodore Horizons July 1985

What is Superscript? –

Superscript combines word processor, spelling checker, calculator and mailmerge facility, all in one package. So Superscript gives you all the tools you need to produce high quality reports, tables, lists, personalized letters and even labels quickly and efficiently. Superscript is a remodeled and vastly enhanced version of the popular **Easy Script** and **Easy Spell** programs that have sold more than 350,000 copies worldwide, so you ***know*** you can rely on it.

Simple for the beginner

If you are a newcomer to word processing, Superscript's simple command menus put you immediately at ease.
Each command is a single word, and for each command there's an extra line of helpful description. To select a command, you simply move the cursor. You don't even have to type the command!
Once you are more familiar with Superscript, you can bypass the menus.

Powerful for the experienced user

Superscript also gives you the ability to *cut work down to a minimum* by storing your own command sequences or text on single keys. This means that with a single keystroke you can reproduce commonly used phrases or multi-line addresses from a glossary, load in document formats or execute a pre-programmed sequence of operations. *That's intelligence!*

Editing options

Superscript gives you all the editing options of a business-style word processor, with full block manipulation for cut-and-paste; overtype or text insertion modes; search and replace with pattern matching and optional case discrimination; backward search; case shifts for single words or larger blocks of text. *And much more.*

Good with numbers

Superscript allows you to extend your editing line up to 240 columns for wide documents like financial statements, and with decimal tabs it's easy to enter properly justified tables of numbers.
Superscript's complete set of calculator functions can be used interactively, or you can operate on numbers from the text of your document. Apart from the usual mathematical functions like add, subtract, multiply, divide, and percentages, you have the ability to add rows, columns or even whole tables.

Good with spelling, too

The built-in spelling checker goes right through your text, checking the unique words against its dictionaries, and stopping at each one it does not recognize. You have the option to correct the error, learn the new word or ignore it. Superscript has its own 30,000 word dictionary. In addition, it stores new words as it learns them.

Mailings with Superscript

Personalized mailings are easy with Superscript. You can enter the data manually or use data extracted from your spreadsheet or database. Merging can be selective with equal-to/not-equal-to logic. A mailing labels template is included to help you complete your mailing and you can alter the template to suit your own label format.

Attention Easy Script users!
If you're an Easy Script user, then Superscript is the obvious choice. With its enhanced features and more powerful facilities, you'll be able to do so much more. There are no compatibility problems either. You can run your Easy Script data or Easy Spell dictionary disks under Superscript.

Superbase — The Programmable Database

For sheer quality and professionalism, Superbase is in a class of its own.

Easy to get started –

The first thing you'll notice about Superbase is the superb 230 page owner's manual.
The tutorial section takes both first-time and experienced users right from first steps through accomplished programming, while the reference section is a model of completeness. You'll enjoy the manual's easy style, its plentiful illustrations and comprehensive index.

Easy to use –

You'll soon be ready to set up your own filing system - business information, professional data, records of all kinds. You design your record layout right on the screen, exactly as you wish it to look, with helpful on-screen explanations never more than a step away.

With the layout in place, you can then use Superbase's built-in commands to enter, change or delete individual records. Once you have built up a file of records, you can select, sort and output data exactly as you need it. To begin with, you'll be accessing Superbase commands through menus. The menus lead you step-by-step to the required action. Nothing could be simpler!

The hidden power –

As you become more familiar with Superbase, you'll want faster ways of accessing commands. One way is through the command line. Any sequence of menu options can also be typed directly onto the second line of the screen, known as the command line. *But this is just the beginning.*

The *real* power of Superbase is that you can string any number of these commands together to form complete programs. When writing programs, not only do you have access to the dozens of powerful Superbase commands: you can also use the complete set of ordinary BASIC language commands.

This capability turns a straightforward data management system into a true database of incredible power.

Developing complex applications for yourself becomes a realistic proposition, with your hardware configuration as the only limiting factor.

LOADS INTO MEMORY TOGETHER

The integrated office –

Superscript and Superbase will actually load into the computer's memory together.
This means that you can switch between Superbase and Superscript at will passing information between the two and working on your filing system and documents without ever having to reload. *That's integration!*

Buy your copy today, and join the thousands of satisfied Superbase users worldwide. They've proved its power and flexibility, and realised its benefits:

- ★ Entire machine-language program is memory-resident: No need for swapping or reloading.
- ★ Built-in single drive back-up utility.
- ★ State-of-the-art indexing for fast retrieval: any record in less than 0.3 secs.
- ★ Fields may be added, and field specifications altered without the need to restructure the file.
- ★ Data types include calculated result for on-screen field recalculations, including full BASIC math functions.
- ★ Searches may be up to 127 fields deep, sorts up to 34 fields deep.
- ★ Report-writer generates fully formatted reports from responses to simple question-and-answer session.
- ★ Allows linking across separate files.
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3 NEW COMMODORE 64 CASSETTES OUT NOW FROM ARIOLASOFT

KARATEKA

A Karateka is one trained in the Way of Karate, the centuries old martial art of Japan. In this classic story of one man's battle against insurmountable odds, your mission is to rescue a beautiful princess from a dungeon deep inside the palace of the evil warlord Akuma.

Brøderbund have created an arcade action game as close to an interactive movie as computer game players are likely to see. Extremely large and realistically animated figures come alive against beautifully detailed scrolling backgrounds. You are in full control of the hero's every movement. Walking, running, bowing and all fighting movements including the strategic timing and placement of kicks, thrusts, jabs and punches are an integral part of the gameplay.

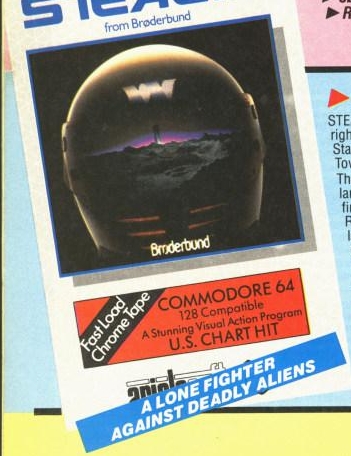
The story progresses through a series of increasingly more challenging encounters with the enemy, until you finally meet the ultimate opponent. Built-in surprises make trying to rescue the princess difficult and addictive.

- *Suspenseful, move-like story*
- *Run, Punch & Kick ability*
- *Smoothly animated characters*
- *3D scrolling backgrounds*
- *Realistic Karate fights to the death*

STEALTH

STEALTH has everything the arcade action player dreams of. You are right at the heart of the action as you pilot a powerful Stealth Starfighter on a mission of utmost importance – to destroy the Dark Tower and with it the Merciless Council of Nine.

The sky is alive with warp-fighters closing in from all directions. The landscape bristles with automated radar towers firing heat-seeking projectiles of doom. Robot-controlled photon tanks . . . high energy laser artillery . . . all of this and more await players of STEALTH.



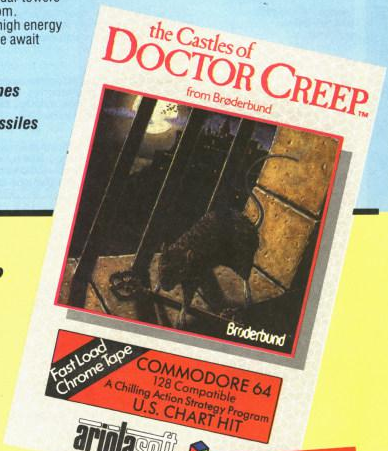
- *Stunning 3D effects*
- *Deadly Enemy Attack Planes*
- *5 Levels of Skill*
- *Vicious Heat-Seeking Missiles*
- *Ominous Dormant/ Active Volcanoes*
- *Positive/Negative Energy Fields*

THE CASTLES OF DOCTOR CREEP

Thirteen castles containing over 200 rooms await inspection. You will find each room filled with challenging puzzles and sinister surprises. Force fields, electrostatic generators, death rays and wandering mummies are only a few of the treats in store.

THE CASTLES OF DOCTOR CREEP is a very challenging arcade strategy game, full of surprises and the Doctor's rather weird sense of humour. There's no turning back on a tour of the good Doctor's home. You will want to keep coming back for more of the Creepy hospitality.

- *2 Player interactive action*
- *13 Separate Castles*
- *Over 200 Rooms*
- *Mummies and Frankensteins*
- *Deadly Lightning Machines and Trapdoors*
- *Perilous Moving Ray Gun*
- *1 or 2 Players.*



Available from all good software retailers – if its not there, please order it – or in case of difficulty send your crossed cheque/P.O. made out to ***Ariolasoft U.K. Ltd.***, including your own name and address, to Ariolasoft U.K. Ltd., Suite 105/106, Asphalte House, Palace Street, London SW1E 5HS.

KARATEKA ***STEALTH*** ***CASTLES OF DOCTOR CREEP*** – Commodore 64 cassettes – ***£9·95*** each.

(Please allow 28 days from release for delivery)

ariolasoft

HIGH PERFORMANCE PROGRAMS

Mail Merge

Send your letters on software, hardware, computing or life in general to Mail Merge, Commodore Horizons, 12/13 Little Newport St., London WC2H 7PP.

Sorry, Solar

TWO UNFORTUNATE blunders crept into the September issue. In P Dent's Basic Recovery program on page 5, line 50 should read DATA 169,8,160,1,145,43,32,51, 165,165 and so on. We missed out the second 165, to our eternal shame. Furthermore, Solar Software's budget games are not priced at £29.99 as was suggested on page 8, but at £2.99. Again, we humble ourselves. Those responsible for the misprints have been sentenced to read ZZAP! 64 until they apologise.

Plus/4 plea

I HAVE recently bought a Commodore Plus/4 computer with which I am very satisfied. However it is difficult to find books covering this machine or software.

At the moment I do not have a disc drive, but would be pleased if you could advise me what books and software are available for the Plus 4 and also where they can be obtained.

B Hunt
Dunstable
Beds

THIS MONTH'S Plus/4 software roundup should be of help; as for books, try our *C16-Plus/4 Companion* by Brian Lloyd, available mail order £5.95 + 50p p&p.

Just one thing...

HERE IS a tip for the fabo game 'Thing On a Spring'.

Hold down the top left arrow key on the keyboard, INST/DEL,T,H,I,N,G, all at the same time. The border will go black, and when you start the game you will flash and your oil guage will flash. This means that your oil never runs out and you will be indestructible.

Simon Smith
Sheffield

Cure for anorexia

I BOUGHT my first CH because it was a very good computer magazine and there was much information in it.

But now I realise that it is beginning to get thinner and thinner and thinner ... until only the cover will be left!

Maybe you could insert some new sections like an art section, an adventure helpline section or a poke section. If there will be a poke section, here are some poke's for the CBM 64,

POKE 808,239: DISABLES THE (STOP) KEY

POKE 808,112: ENABLES THE (STOP) KEY

POKE 120,0: DISABLES INPUTS:

POKE 788,194: DISABLES (RUN-STOP/RESTORE)

WAIT 653,4: WAITS UNTIL (CTRL) IS PRESSED

POKE 774,0: LIST GIVES ONLY THE NUMBERS

POKE 649,0: DISABLES ALL KEYS

POKE 649,10: ENABLES THE KEYS

POKE 650,128: AUTO-REPEAT ALL KEYS

POKE 650,0: AUTO-REPEAT ONLY CURSOR KEYS

SYS 64764: RESET

Michael Peeters
Mortsel
Belgium

***Commodore Horizons* will be getting fatter shortly. In any case, we always feel we offer quality if not quantity ...**

Perils of poking

HERE'S A tip for Vic-20 'Perils of Willy' players. Follow these steps for infinite lives:

1) Reset VIC, Type POKE 646,1:POKE 36879,8 (Return)

2) Rewind tape, type VERIFY (Return) and start tape

3) Stop tape when cursor reappears

4) Reset VIC, type LOAD (Return)

5) When READY appears, press RUN-STOP and RESTORE keys

6) Type POKE 11020,204 (Return)

7) To begin game, type SYS 12269 (Return)

I hope this is of some use!

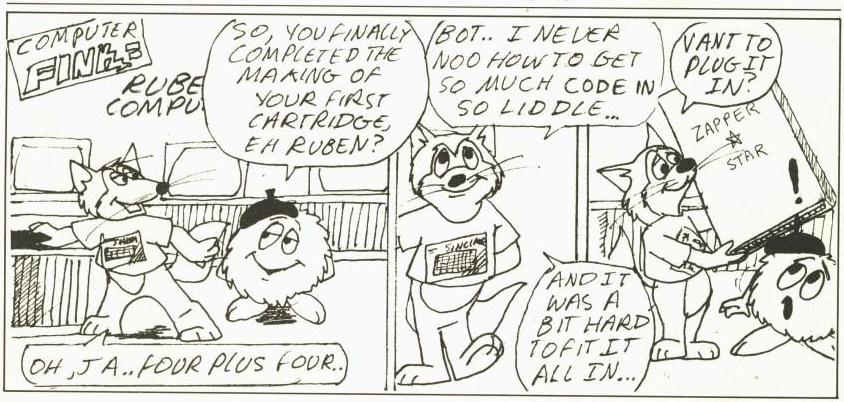
Gareth Gee
Manchester

Help in Essex

I HAVE recently formed an adventure help line in Essex, a small informal club with free membership. Through the Club I hope to give up-to-date information on the latest adventures, and circulate a monthly newsletter to members at no cost. The Adventureline will be available each evening from 7-9 and at weekends. Hints are available for all Scott Adams adventures, Level 9, Infocom, and various other games.

The Club exists solely as a service to other adventurers. Anyone interested in joining can get more details by telephoning 0245-442098.

Roger Garrett
Chelmsford
Essex


COMPUTER FINK
SO, YOU FINALLY COMPLETED THE MAKING OF YOUR FIRST CARTRIDGE, EH RUBEN?
BOT.. I NEVER NOO HOW TO GET SO MUCH CODE IN SO LIDDLE..
VANT TO PLUG IT IN?
ZAPPER STAR
AND IT WAS A BIT HARD TO FIT IT ALL IN...
OH, JA.. FOUR PLUS FOUR..

CBM Int'l losses

COMMODORE International expects to make a loss of $80m in the last quarter of the year. Only a year ago, the company reported record profits of $144m.

The problems seem to have been caused by overproduction, leading to hardware stockpiles having to be devalued. Despite prospects of opening up new markets in Latin America, sales have fallen sharply, and share prices have dropped from a high of $60 to $10¼.

American commentators are now suggesting that only a major success for the Amiga machine, against the opposition of IBM and the ailing Apple Corp, can restore Commodore International to its former healthy state.

Now that's what I call . .

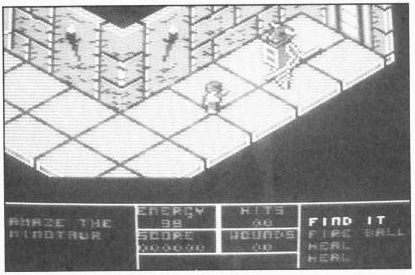
VIRGIN SOFTWARE is taking a leaf out of the record industry's book by releasing a "compilation album" of popular games titles for the 64.

Now Games will be available from August 19th. The games on the Commodore 64 version of the tape, which will sell for £8.95, are **Lords of Midnight** (Beyond), **Everyone's a Wally** (Mikrogen), **Strangeloop** (Virgin), **Brian Bloodaxe** (The Edge), **Arabian Nights** (Interceptor), and **Falcon Patrol 2** (Virgin).

The compilation is being backed by a £100,000 advertising campaign on TV. For more details contact Virgin at 2-4 Vernon Yard, Portobello Road, London W11.

The magic Edge

LATEST game product from The Edge, **Wizardry**, promises to set new standards for 64 graphics and animation.



Already compared favourably to games like Ultimate's **Staff of Karnath**, Wizardry features over 70 play levels, each with multiple chambers depicted in perspective. The game, which is expected to be shown at the PCW show, features music choreographed to the action and composed by the team responsible for the music in CRL's **Rocky Horror Show** game.

Wizardry also features "devious" puzzles which when solved open doors to otherwise inaccessible parts of the action.

The game will cost £9.95 on cassette. Contact The Edge at 12/13 Henrietta Street, Covent Garden, London, 01-240 1422.

Audiogenic take to bat and brush

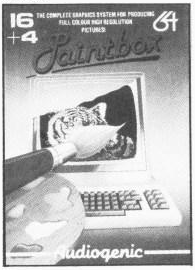
AUDIOGENIC'S successful program **Graham Gooch's Test Cricket** has been made available on disk "by public demand". The game, which retails all the animated graphics, player options and scoring features of the cassette version, will cost £11.95. Audiogenic's latest release is **Paintbox**, a high-resolution graphic design package with versions for the 64 on one side of the cassette and for the C16-Plus/4 on the other.

Paintbox costs £9.95, and can be operated either by joystick or keyboard. The "duckshoot" menu contains commands for freehand drawing and positioning of lines, radians, circles, frames and boxes. Both versions contain a range of cursor speeds and pallette of sixteen colours.

The C16 version also contains a colour luminance command, while the 64 version can store two pictures in memory at the same time, and has an OOPS command which erases mistakes. Both versions allow pictures to be saved to tape or disk.

Audiogenic's last bit of news is confirmation of a marketing agreement with Tyneside-based software house Icon. Best known for their arcade games for the Acorn machines, Icon says Audiogenic will be handling marketing, sales and distribution of all current and future Icon programs.

Contact Audiogenic at 39, Suttons Industrial Park, London Road, Reading, Berks, 0734-664646.



Anirog's designs

LEADING games software house Anirog has announced plans to enter the utility software field, and to develop the hardware range including the **Voice Master** and **Super Sketch** products.

The software product is a CAD package for the 64. The program will enable users to generate accurate 3-D images of any required object, which can be modified for design and testing applications.

Hardware plans include a Disk Nibbler, which allows single-sided disks to be used as double-sided by cutting an extra notch, at around £6.95, and a range of dust-covers for micros.

New games programs planned include **Space Pilot 2**, a sequel to the popular arcade game, **Jump Machine**, and a **Trivia Quiz** program with questions tailored to the UK audience.

Anirog plans to have all the products available before Christmas. For more details, contact Unit 10, Victoria Industrial Park, Victoria Road, Dartford, Kent, 0322 92513.

MM at CBM

CHRIS KADAY has been appointed Marketing Manager for Commodore UK. He will have special responsibility for

Chris Kaday — the new man

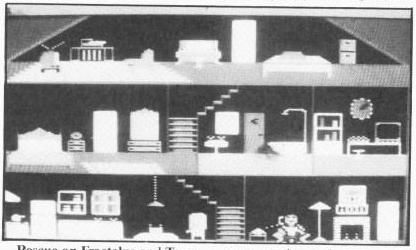
business systems, and will report to Paul Welch, Manager, Marketing and Consumer Sales.

Kaday was formerly with Kalamazoo Business Systems, where he gained sales experience then moved into marketing, becoming Head of Sales and Marketing and working on the launch of the K series.

Kaday's role will be to "maintain the effort on home computers, and pave the way for the launch of a range of innovative business products in the business systems area, including the Commodore 900 and the Amiga."

Life in a 64

GAMES software house Activision has announced its product line-up for the period leading up to Christmas. President, Gregory Fischbach, and UK MD Hugh Rees-Parnall believe that the software will "entertain, enlighten and Gamemaker expand the minds of home computer owners around the globe."



Rescue on Fractalus and **Tour de France** are reviewed in this issue. Fractalus is the first 64 game to be produced by **Lucasfilm**, the company responsible for the **Star Wars** series. Tour de France is the first Activision product to be developed in Europe.

Gamemaker is a programming tool using simplified menus and instructions to enable you to design your own machine-code game. Sprites, colours, movements, scoring and scenery can all be easily designed, and a number of sample games are included to give you some ideas to work on.

Somebody's Living in my Computer is not so much a game, more a way of life — it allows you to communicate with an electronic "buddy" living in a little house in your 64. The characters and actions of the little people are unpredictable and sometimes surprising — and you might be surprised at just how much they can do for themselves.

Barry McGuigan's World Championship Boxing is a sports simulation which concentrates on skill rather than pure slog — you have to design your training routine, create opponents, then fight nineteen contenders to make it to the top.

Ballblazer is another Lucasfilm product, a three-dimensional futuristic sport — or is it a war? — in which fast-moving droids battle across a scrolling landscape in an attempt to score goals.

All the programs will be in the shops by Christmas; cassettes will be £9.99, disks where available £14.99, except Gamemaker, which is £14.99 on tape and £19.99 on disk.

Contact Activision at 15 Harley House, Marylebone Road, London NW1.

10-4 to Compunet

COMPUNET'S latest service is a scrolling "CB-style" chatline for real-time conversations.

The service, scheduled for launch in the late Autumn, will allow Compunet subscribers to type contributions into a "window" at the bottom of the screen. There will be a number of individual chat-lines, so that users can decide which conversation to join.

Compunet's current chatline service takes the form of a "bulletin-board" by which contributions appear on the screen shortly after being sent. The new service takes the concept of interaction, which is central to Compunet, one step further.

At the same time, the multi-player dungeon adventure MUD has now been made available to non-Compunet members; anyone owning a home computer and a 1200/75 baud modem can no play the game, often at local call rates through Compunet's 12 nationwide access points.

For details contact Compunet at Metford House, 15-18 Clipstone Street, London W1P 7DF.

Strongarm tactics and monster machines

MARTECH Software has announced two new games based on the robot monster **Zoids** and strongman **Geoff Capes**.

The Zoids, successful machine-monster toys marketed by Tomy, have been brought to the monitor screen by The Electric Pencil programmers, the team behind **The Fourth Protocol** game. A large-scale advertising campaign, including a launch at the PCW show, is planned for the Zoids game, which is the first of a projected series.

The Geoff Capes Strongman game is a sports simulation rather than a "joystick-bashing" exercise — it allows you to guide Geoff through a training program, then go for the Strongman championship.

Both games will be available in October at £8.95.

Contact Software Communications, Martech House, Bay Terrace, Pevensey Bay, East Sussex, 0323 768456.

See the Show

USE THE voucher printed here to get 50p off the admission fee for the Commodore Horizons Computer Show at the Novotel, Hammersmith, London, on Saturday and Sunday, 26th-27th October.

The show, arranged by Computer Marketplace in conjunction with Commodore Horizons, will offer something for every Commodore computer user; games players, applications software users and business users. Just cut out the coupon — photocopies are NOT acceptable — and you can get 50p off the entrance fee.

Exhibitors should contact Computer Marketplace, 20 Orange Street, London WC2H 7ED, 01-930 1612.

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By Underground: Hammersmith (Metropolitan Line), Hammersmith (Piccadilly and District Lines)
By bus: 266, 714, 716, 290, 30, 72, 73, 74

26th/27th October 1985
Novotel Exhibition Centre, Hammersmith

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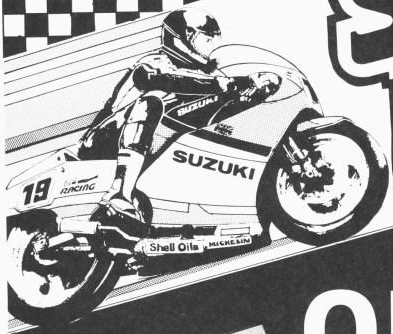
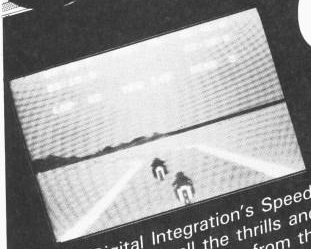


ON YOUR BIKE!



Digital Integration's Speed King brings you all the thrills and spills of big bike racing from the safety of your 64! It's a fast and realistic simulation in which you must use all your skill and courage to defeat your opponents on the way to the world championship. We have twenty copies to give away, each with a big colour poster — all you have to do to win is to answer the questions on the right, and send your entry on a POSTCARD with your name and address to SPEED KING CONTEST, Commodore Horizons, 12/13 Little Newport Street, London WC2H 7PP. Closing date is the last day of October; winners will be announced in the December issue.

- What film star rode a motor bike to freedom in the film The Great Escape?
- What to the initials TT stand for?
- What American stuntman tried to jump the Grand Canyon on a rocket-powered motorbike?

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VIC 20

- Sargon II Chess (cart.) ☐
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- Harbour Attack (cass.) ☐
- Space Sweep (cass.) ☐

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COMMODORE 64

- Programmer's Reference Guide (book) ☐
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  Advanced screen-dump facilities. Prints Low-Res, Hi-res and Multicolour. Full page!!! Even from games and paint-programs, like Doodle, Koala Pad etc. Searches automatically for the memory-address of the picture.
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Charts

Top Twenty CBM 64 Games

1	(3)	Way of the Exploding Fist	Melbourne House £9.95
2	(—)	Hypersports	Imagine £9.95
3	(2)	Elite	Firebird/Acornsoft £14.95
4	(—)	Frankie goes to Hollywood	Ocean £9.95
5	(5)	Pitstop 2	Epyx/US Gold £9.95
6	(4)	Softaid	Softaid £4.99
7	(—)	Nick Faldo's Golf	Mind Games £9.99
8	(—)	Rockford's Riot	Monolith £9.95
9	(—)	Graham Gooch's Cricket	Audiogenic £9.95
10	(—)	Fourth Protocol	Hutchinson £12.95
11	(—)	Mr. Do	Datasoft/US Gold £9.95
12	(16)	International Tennis	Commodore £5.95
13	(—)	Thing on a Spring	Gremlin £7.95
14	(—)	Tour de France	Activision £9.99
15	(—)	Great American Road Race	Activision £9.99
16	(—)	Five-a-Side Soccer	Anirog £5.95
17	(—)	Red Moon	Level 9 £6.99
18	(17)	Drop Zone	Microprose/US Gold £9.95
19	(1)	Dambusters	Sydney/US Gold £9.95
20	(11)	Jet Set Willy 2	Software Projects £9.95

Bubblers

1	Mig-Alley Ace	Microprose/US Gold £9.95
2	Skyfox	Ariolasoft £11.95
3	Beachead 2	Access/US Gold £9.95
4	Speed King	Digital Integration £9.95
5	Robin of Sherwood	Adventure International £9.95

Top Ten CBM 64 'Non-games'

1	(1)	Mini Office	Database Publications £5.95	*Business*
2	(2)	Music Studio	Activision £14.99	*Utility*
3	(4)	Charlie & the Chocalate Factory	Hill McGibbon £8.50	*Education*
4	(7)	Mr. T (series)	Ebury £9.95	*Education*
5	(6)	White Lightning	Oasis £14.95	*Utility*
6	(3)	Simon's Basic	Commodore £50.00	*Language*
7	(8)	Mr Men (series)	Mirrorsoft £9.95	*Education*
8	(5)	'O' level (series)	Commodore £14.99	*Education*
9	(—)	Forth	Romik £14.95	*Business*
10	(9)	Entrepreneur	Collinsoft £19.95	*Business*

Bubblers

1	Pan 'O' level (series)	Hill McGibbon £14.95	*Education*
2	Machine Code Tutor	New Generation £14.95	*Utility*
3	Games Creator	Mirrorsoft £12.95	*Utility*

Top Five C16 Games

1	(—)	Airwolf	Elite £6.95
2	(3)	BMX Racers	Mastertronic £1.99
3	(2)	Dork's Dilemma	Gremlin £6.95
4	(4)	Dark Tower	Melbourne House £5.95
5	(—)	Tower of Evil	Thorn EMI £5.95

Bubblers

1	Gremlins	Adventure International £9.95
2	Spectipede	Mastertronic £1.99
3	Vegas Jackpot	Mastertronic £1.99

Top Five Vic 20 Games

1	(1)	Rockman	Mastertronic £1.99
2	(4)	RIP	Mastertronic £1.99
3	(—)	Doodlebug	Mastertronic £1.99
4	(3)	King Tut	Mastertronic £1.99
5	(—)	Mickey the Brickey	Firebird £2.50

Bubblers

1	Psycho Shopper	Mastertronic £1.99
2	Football Manager	Addictive £7.95
3	Flight Path	Anirog £6.95

All data compiled by RAM/C from a panel of specialist dealers.
Sales period — 4 weeks prior to August 16th 1985

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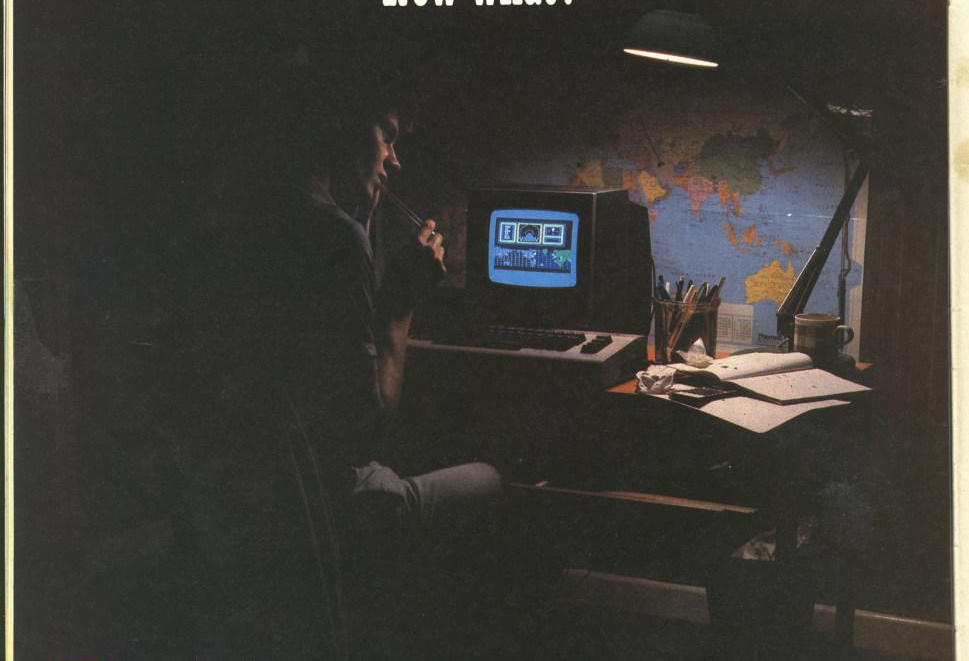

"Logon please".
One word appears on your screen.
What do you do now?
You don't know the password. You don't even know what computer system you've hacked into. But you do know that you must find out more.
There are no instructions. No rules. No clues.
You're completely on your own.
You've found your way in. But is there a way out?

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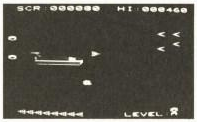
Mail order: Activision (UK) Ltd., 15 Harley House, Marylebone Road, London NW1. Tel: 01-935 1428.

Vics in space

Another from Atlantis, and well up to standard for unexpanded Vic games. **Space Escort** is a standard shoot'em-up featuring fighters, alien spaceships and huge space transports. You start with nine fighters, which flit around the screen under joystick or keyboard control. Your job is to defend the



27 space liners, shown one at a time on the left hand side of the screen, from the savage attacks of the various weeblies (Flies, Spheroids, Spirals, Kamikazes, Asteroids and Mother Ships) which shout on screen from the right hand side. Each liner has seven force shields, which change colours as the baddies knock them out. It's just like something from a E.E. "Doc" Smith novel. You start with nine fighters and are awarded an extra four for clearing a screen.

The "sprites" are fairly well designed, fast moving and colourful. The sound effects are well up to standard too, and as usual there are many attack waves and bonuses for completing screens.

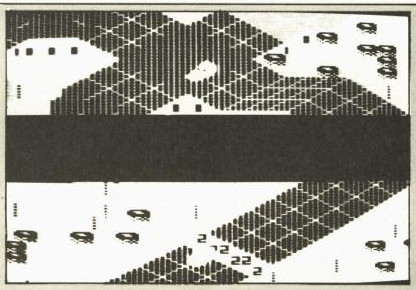
Program: Space Escort, Vic 28
Supplier:
Price: £2.50
Graphics: ★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★

Burning rubber

Racing Destruction Set is one of those titles that says it all — the game simulates slot car racing (like Scalextric) with options for blowing each other up. However, being an electronic Arts import from America (courtesy of Ariolasoft), naturally there's more to it than that. A lot more.

The display is split screen (as per **Pit Stop II** but with very nice **Zaxxon**-like graphics showing the section of the track you are presently occupying in glorious 3-D.

There are 50 tracks to choose from . . . or you can build your



own. Fancy racing moon buggies? How about changing the gravity? At ⅓rd G you can make the **Dukes of Hazzard** look like a bunch of OAP's out for a Sunday drive, as you zoom into orbit over the ramps.

This is really jolly good fun — and with the almost endless permutations of tracks and cars (again, you can modify each type in various ways), you won't get bored with this one easily.

One reservation — owners of the faithful 2CN will need a good book to read while all the different sections load — I suggest **War and Peace**.

Not nailbitingly gripping as PSII perhaps, but has enough merits of its own to justify a good look, if you are a racing games fan.

Program: Racing Destruction
Supplier: Ariolasoft
Price: Disk £14.95
Graphics: ★★★★★★★
Sonics: ★★★★
Gameplay: ★★★★★★

True to type?

Type-Snyper is a good basic idea, but might perhaps have been developed much further. It's an educational arcade game which aims to teach touch-typing.

A helicopter flies across the sky dropping letters on parachutes. As the letters float to the

ground, you have to hit the appropriate keys on the 64 to zap them out of the air. As you hit the correct key the letter is voiced by software-generated speech.

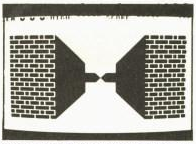
There are 16 lessons to get through, and you can redefine, save and reload your own exercises if you want, as well as selecting the speed at which you wish the letters to come up. This all sounds fine — adding a little entertainment value to the onerous job of learning touch-typing. But there are several problems, firstly, the software speech isn't that clear, and also has a job catching up with the keys you're hitting. So the whole idea, of using the speech to allow you to take your eyes off the keyboard, doesn't quite work. Secondly, unless I'm being misled by the lack of instructions with the review copy, all the exercises are in upper case — not much good when you're required to use lower case with shifts to upper in normal typing.

Program: Type Snyper, 64
Supplier: Tymac
Price:
Graphics: ★★★★
Sonics: ★★★★
Gameplay: ★★★★

Hee-hee in 3-D

Is the world ready for another version of PacMan at this stage of the game? Audiogenic obviously think that the answer is yes, since they've now released a version of Supersoft's 3-D Glooper for the C16. Fortunately, the "3-D" element of the title gives away the fact that this isn't the normal bird's eye view maze game. Although the plot is the same — make your way around a maze, avoiding the gloopers while collecting magic squares, seeking out the power packs which enable you to turn the tables and devour the gloopers; the screen display is an impressive perspective graphics affair seen from the viewpoint of the player.

There are 300 dots to collect as you make your way around the maze. Pressing F1 brings up a map showing your current position and that of the nearest glooper. You'll also hear an



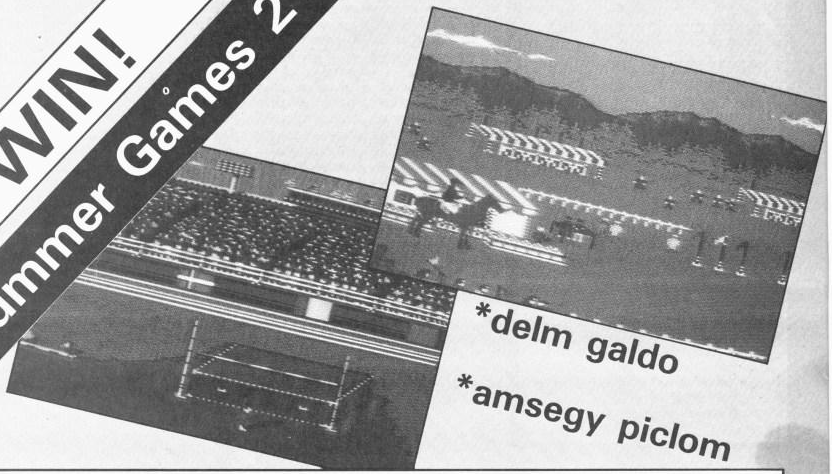
alarm sound if there are gloopers nearby.

Control is by joystick or keyboard, and though the sound effects are minimal they're quite sufficient.

The biggest problem with 3-D Glooper is the packaging. The artwork is so awful, resembling something done in crayon by an 8-year-old, that it could put off potential purchasers. A pity, since this is the first game of its kind for the C16, and it delivers a good deal more than the artwork suggests.

Program: 3-D Glooper, C16
Supplier: Audiogenic/Supersoft
Price: £4.95
Graphics: ★★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★★

WIN! Summer Games 2



*delm galdo

*amsegy piclom

GOLD MEDAL GAMES!

SUMMER GAMES 2 looks like being the biggest success so far for US Gold — no surprise, considering the astonishing graphics, amazing sound and fabulous gameplay.

Now you can win a one of twenty copies of this stunning program, on tape or disk. Summer Games two offers eight events;

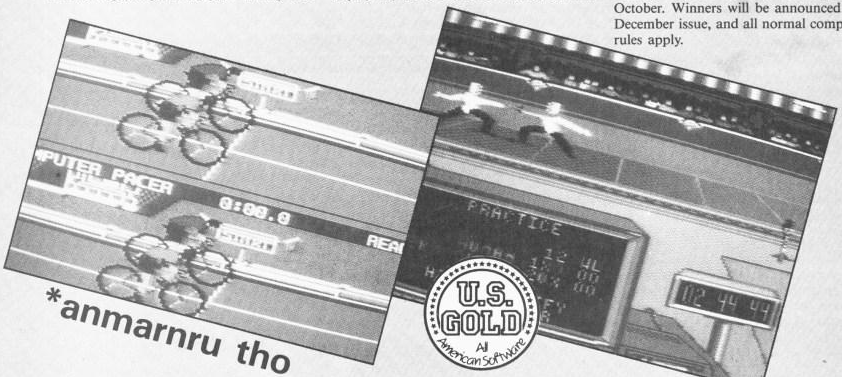
* **Triple Jump** — timing is critical as you leap into the record books, and see your performance replayed on the monitor screen.
* **Rowing** — rhythm is all-important as you speed through the water, competing against the computer or another player.
* **Javelin** — speed towards the line and time your throw exactly; judge the angle too for crowd-pleasing results.
* **Equestrian** — guide your horse over intimidating jumps; miss your timing and you'll take a nasty tumble.
* **High Jump** — this bar goes higher and higher — do you have the skill to soar over it?
* **Fencing** — head to head combat with strategy playing just as important a role as speed and skill.
* **Cycling** — Keep your joystick rotating to keep those wheels turning!
* **Kayaking** — Steer between the gates, avoid the white water, and keep an eye on the time clock.

All the games are accompanied by original music, and there are opening and closing ceremonies featuring some of the best graphics and animation yet seen on the 64. With up to eight player options, high score tables, national anthems, practice mode, and options to play any combination of events, Summer Games 2 is the one everyone will be wanting to play.

Summer Games 2 is available on cassette at £9.95, and disk at £14.95. All you have to do to win a copy is to unscramble the three anagrams, all of which are connected with sports.

When you've deciphered them, complete this tie-breaker sentence in an apt, original and amusing manner in fifteen words or fewer; "I want to be a US Gold medal winner because . . ." Then tell us whether you want a tape or disk version.

Send your entry with your name and address on a POSTCARD to *Summer Games 2 competition, Commodore Horizons, 12/13 Little Newport Street, London WC2H 7PP.* Closing date is the last working day of October. Winners will be announced in the December issue, and all normal competition rules apply. ■

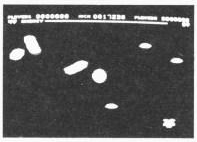


*anmarnru tho

Allsorts

A title from a new budget software house is always likely to come in for pretty heavy scrutiny, is it going to be cheap and cheerful, or just cheap and nasty? **Vortron** acquits itself fairly well, although it doesn't reach the "rush out at once and get it" status of some Firebird or Mastertronic games.

In the centre of the screen is an energy cone which is the target for the alien baddies. Your task is to pilot your ship around the screen eliminating them. Your task is much more complex by the fact that the core attracts your missiles towards itself, so to hit the baddies you have to manoeuvre yourself until they are between you and the core. As each wave is destroyed, an energy gate opens and on docking with it your ship is transported to the next zone to be defended. Control is by joystick only and

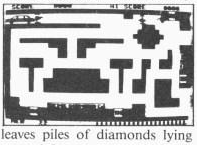


there are nine levels of play with several waves per level, and a bonus life for every 10,000 points. Some of the sprites are quite good, resembling cosmic liquorice allsorts, insects and asteroids. Vortron is fine for half an hour's distraction, and an interesting introduction to the Budgie label.

Program: Vortron, 64
Supplier: Budgie
Price: £2.50
Graphics: ★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★

Jewel search

This month's most feeble offering as far as sophisticated programming is concerned, but a reasonable effort at the price. **Cops and Robbers** is basically a maze game, but with just enough original elements to make is worth another look. You control the figure of a jewel thief moving around the offices of a diamond company which, with total disregard for basic security,



leaves piles of diamonds lying around for you to grab.

Once you've found your way into the building, avoiding police and helicopters, your aim is to collect as many diamonds as possible, while knocking off policemen. You have to return to your getaway car to deposit diamonds or restock with bullets.

Extra elements include trigger-happy policemen, haunted diamond mines, hidden keys and combination locks. You'll need toi find a torch to explore the depths of the mine where the best diamonds are found and you have to avoid being captured (in which case you'll end up in the nick) or shot (in which case you'll end up on a slab in the morgue).

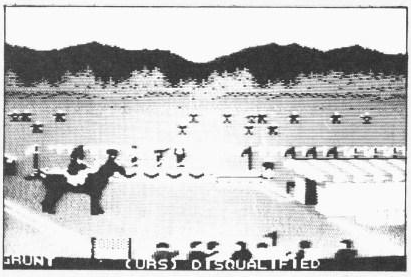
Miami Vice it ain't — but at least it isn't Juliet Bravo either.

Program: Cops 'n' Robbers, 64
Supplier: Atlantis
Price: £2.50
Graphics: ★★★★
Sonics: ★★★★
Gameplay: ★★★★

Play the games

Sequel to last year's big hit, **Summer Games 2** is as impressive graphically as anything you'll ever see oan the 64. Epyx's programmers push the machine to its absolute limits, producing the most wonderfully detailed animations and excellent sound and music as well.

The format is exactly the same as S61, eight Olympic events, which can be played successively or individually, all joystick controlled. To give a quick rundown, Triple Jump requires precise timing to achieve a coordinated series of leaps. Rowing is a matter of keeping up a left-right rhythm to build up speed. Javelin is perhaps one of the most impressive sections, with both timing and speed combining to bring about the best result.



Equestrian is equally impressive, as you guide your horse over a series of leaps, while High Jump is one of the most difficult to master. Fencing is original and complex. Cycling is dull with nothing more than a regular clockwise joystick movement required, and Kayaking is demanding on both timing and forethought to achieve best results.

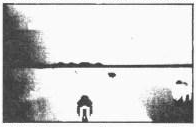
The games, along with the opening and closing ceremonies, are astonishing graphically and marvellous sonically. Unfortunately the gameplay itself doesn't hold the interest — as we've all seen this kind of thing too many times before. An essential purchase, but one you'll probably enjoy watching more than you enjoy playing.

Program: Summer Games 2, 64
Supplier: US Gold
Price: £9.95 tape, £14.95 disk
Graphics: ★★★★★★★★★
Sonics: ★★★★★★★★★
Gameplay: ★★★★★★

Vrooom!

Digital Integration has done a splendid job of converting this motorbike racing game to the 64. Like the original Spectrum version, it's basically **Pole Position** on a Suzuki, the difference being that here you have a choice of ten authentic racing circuits.

There are 13 competitors for you to overcome at three skill levels, with joystick or keyboard control of direction and gear



shift. There are six gears, which correspond to different speed ranges, and acceleration and braking are affected by gear. Colliding with other riders results in a nasty fall and a time penalty while leaving the road results in you slowing down, and eventually crashing if you don't get back on the track quickly enough. Graphics are fair, with a mountainous background and well-animated bikes.

There are two timers, giving you your current lap time and best lap time, and your race time. New lap records or race records are announced on a display board.

Apart from the minor fault that I'm sure you can't start a bike off in sixth gear, Speed King is realistic and exciting. Well worth looking out for.

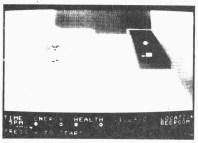
Program: Speed King, 64
Supplier: Digital Integration
Price: £9.95 tape, £14.95 disk
Graphics: ★★★★★★★
Sonics: ★★★★★★
Gameplay: ★★★★★★★

Bits and pieces

BY far the most original idea to crop up this month, Mad Doctor is a joy to play, hilariously funny and imaginatively programmed.

You play Franz Johann Blockenspiel, the eponymous loony whose task is to assemble the grave-robber's equivalent of a jigsaw puzzle — stitching together bits of bodies to make a monster. The action takes place in several dozen 3-D locations, joined by a map screen through which your little figure moves under joystick control.

There's a command line through which you can enter directions such as OPEN GRAVE, GET BODY, KILL VILLAGER and so on, and lots of strategic elements to consider — for instance should you use corpses from the graveyard, knowing that the bits you require might be a little mouldy, or should you risk the wrath of the villagers (indicated at the bottom of the screen) be looking for



fresh ingredients? Once your monster is assembled, there remains the challenge of animating it, following clues fxrom your grandfather's test book and of demonstrating it to the villagers, at which point you'll either be hailed as a genius or hanged as a murderer depending on the quality of your handiwork.

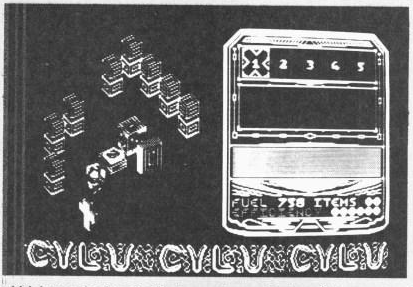
Ghoulishly funny and endlessly inventive. Dig up a copy at once.

Program: Mad Doctor, 64
Supplier: Creative Sparks
Price: £6.95
Graphics: ★★★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★★★★

Chambers of Cylu

Just to prove that **Ultimate**-style graphics are possible on the 64, Cylu gives a split screen display, the left hand side of which consists of detailed, single-colour chambers. On the right hand side are various status displays giving the fuel efficiency and inventory of Cylu, the bizarre hopping biomechanoid hero.

Your task is to guide Cylu through the chambers, which are filled with mysterious artifacts, looking out for fuel pods while searching for 24 hidden objects



which have to be deposited in the Master Computer. Once all the objects are found Cylu becomes the new leader of the people of Evol. This is presumably a Good Thing.

Forcefields bar various sections of the maze, until removed by depositing the correct key items in the computer. There are also teleport terminals scattered about, if you can figure out how to use them.

Options include GET/DROP/EXAMINE/USE objects, and SAVE/LOAD game, which you'll probably need since it seems pretty complex to me.

This one is brilliant. Let's hope we see more of Cylu.

Program: Cylu, 64
Supplier: Firebird
Price: £2.50
Graphics: ★★★★★★★
Sonics: ★★★★
Gameplay: ★★★★★★★

Pedal power

Galibier et Tourmalet/En danseuse jusqu' au sommet/Pedaler en grand braquet/Sprint final a l'arrivee . . . Tour de France, tour de France . . .

Activision's bike racing epic captures the spirit of the event just as well as **Kraftwerk's** song of the same name. The graphics are little short of amazing, as you guide your bike around the sixteen scrolling screens representing the stages of the course.

The competition mode allows

up to six players to compete, one at a time, each selecting a country to represent and a bike and jersey colour which will affect his performance — some are better on corners, some on straights, and so on. Control is by joystick or keyboard, waggling gently to get moving and using SHIFT or the fire button to allow steering.

The game is wonderful to watch, and brilliantly programmed, but once you've got the hang of controlling the bike there doesn't seem to be much to it. I couldn't imagine wanting to complete all sixteen stages in one session. The little details make it all worthwhile though — the map of France from which you select the stages you want to race in, the French screen displays, the tumble you take when you ride off the road. Check it out if you think you're ready for a marathon.

Incidentally, Ralf and Florian say "**Technopop** is almost finished".

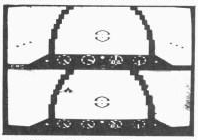
Program: Tour de France, 64
Supplier: Activision
Price: £9.99
Graphics: ★★★★★★★★
Sonics: ★★★★★★★★
Gameplay: ★★★★★★

Trumped

Another combat flight simulator, very much along the lines of **Fighter Pilot** or **F15 Eagle, Mig Alley Ace** doesn't boast many features not seen before. The graphics and animation are average at best, with a horizon line which, instead of banking smoothly as your plane moves, breaks up into a stairway effect which is worse than any other flight simulator I've seen.

About all Mig Alley Ace has to offer which is new is the unusual split-screen effect. The top half of the screen shows the view from the cockpit of the plane you control, and the lower half shows a similar view from the cockpit of one of your wingmen.

Anyone interested in combat flight simulators will probably already have a program more



sophisticated than this one, and probably much better graphically. Since the Korean War setting adds litle to the game itself, I can't see this one giving much competition to established favourites such as Digital Integration's **Fighter Pilot**.

Program: Mig Alley Ace, 64
Supplier: US Gold
Price: £9.95 tape, £14.95 disk
Graphics: ★★★★★
Sonics: ★★★★★
Gameplay: ★★★★★

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RESCUE ON FRACT

Fearless ***Ken Matthews*** *takes on another deaf-defying mission in the depths of space . . . join him as he cuts through the acid mists and approaches a hostile world . . .*

BLAZING lights accelerate past your eyes as you hurtle from the launch tube of the Mother Ship. The force moulding you to your seat is relentless as the afterburners of your Valkyrie fighter build to full power.

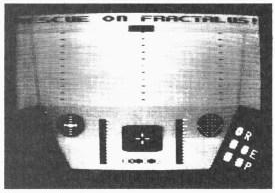
After what seems ages of blinding pain you shoot into the void of space, and realize you can relax for several minutes until you pass through the atmosphere of Fractalus to a potentially deadly confrontation with the Jaggi; Several minutes to reflect on what brought you to the front line of mankind's bitterest conflict in a millenium . . .

The rot began when the first ships reached the star system of Tepdi Vad Neroleil Rachre in the furthest reaches of our galaxy nearly five years ago. There they encountered the J'haggi Ri Kachataki who received our friendly overtures with murder and treachery — the war agains the Jaggi had begun. Of course, in a system geared for peace, the Jaggi took the early advantage, pushing our troops back with their fierce, suicidal tactics and preference to do battle on the most hostile planets of the galaxy.

Our navy, the Ethercorps, are slowly gaining the advantage in space, but that is little more than half of the battle since the Jaggi have dug in on the planets too hostile for human habitation and though our space pilots are the best, they are at a severe disadvantage inside a planet's atmosphere.

Here they are buffeted by gale force winds or typhoons of acid rains and gasses, as they fly through tortuous mountain passes under hails of laser fire from Jaggi emplacements. Needless to say, in this unfamiliar environment losses are heavy.

Several years ago the Ethercorps disbanded the Air Pilots division, and there you were,



Your mission begins . . .

a redundant flyer left to make a living blasting the rocks of hellish worlds and scooping the rare minerals into your cargo holds. The closest you got to the war was the 18.00 holofax bulletins until that fateful day your call-up papers dropped into comtube with a soft plop that belied the importance of their contents.

It would seem that some gold-braided S.O.B. of an admiral decided that most of the spacers who crashed, survived for hours until their air ran out or were killed by the alien environment.

The ideal solution was to send trained Air Pilots in Valkyrie fighters to rescue the flyers and, hopefully, take a few Jaggi out at the same time. Suddenly your skills were at a premium and you were stupid enough to leave a forwarding address . . .

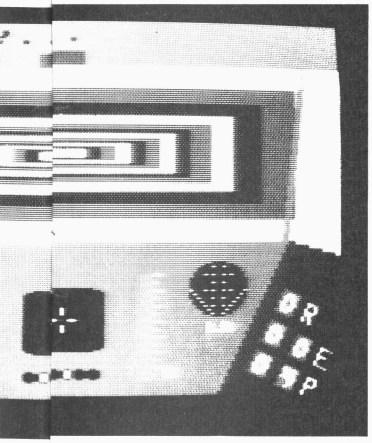
So here you are, approaching Fractalus, the hottest hell-hole on the front line. Clouds of acid gas, the hardest terrain anywhere and Jaggi fire everywhere around your hapless colleagues.

The Valkyrie, now beginning to align for entry into the atmosphere, is a good, solid fighter capable of mach 7.2 on its turbojets and is usually armed to the teeth. Unfortunately, to hold the passengers you hope to collect, almost all of the weaponry has been removed, leaving only the Dirac Mirror Shield (essential for those tiny bumps with mountains) and the Anti-Matter Bubble Torpedo generator (AMB) which at least is capable of handing out deadly punishment. The AMB is just right for the job though since it doesn't need to hit to destroy — just get close. Ideal for fighting in those tight turns between the myriad peaks of Fractalus.

Still, the stars have all winked out and the hull temperature is falling rapidly as you descend into the clouds of acid vapour that pass for air on this dirt-pile. Sensors will pick out the mountains though and you'll fly at full visibility, at least as long as daylight lasts.

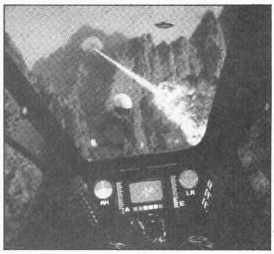
A high-pitched bleep tells you you've located a downed ship — no visual on his beacon though — probably just nestled down in that fold in the rocks a couple of klicks ahead — Now! a burst of light and the rending scream that marks a laser hit on your shields — your war has begun, ready and willing or not . . .

IF THE FIRST part of this review sounds



CTALUS

GAME: Rescue on Fractalus
MICRO: CBM 64
PRICE: £9.99
SUPPLIER: Activision



like a film script, that's because **Rescue on Fractalus** is the first Activision game licensed by **Lucasfilm**, who have given us some of the most exciting and entertaining movies of recent years.

Your mission is quite simply to rescue as many pilots as you can, use your boosters to return them to your mother ship and re-arm for your next tour of duty.

The screen shots show you, better than I can describe, just how good the 3-D terrain effects are and just how good your reactions will need to be if you try flying between those peaks at full speed. The backgrounds are generated by a random mathematical process known as "fractals" — hence the title of the game.

Unlike many flying "simulations", the extensive panel of instruments, lights and counters all have a purpose, but don't panic! — they are all simply explained in the manual you get with the game.

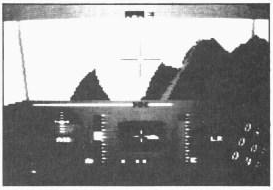
The game has many levels of play, and you can begin where you like. The higher levels are set closer to the equator of the planet where the enemies are thicker on the ground and daylight lasts only a few minutes at a time. At night you must fly on instruments alone.

You would be best advised to begin at the lowest levels where there are few enemies and you can learn the featherlight touch needed to control the Valkyrie. Rescuing the pilots is quite easy; just land within range and turn off the ship systems, whose radiations would fry the pilot, and the thankful chappie will be seen sprinting towards your craft. He will politely knock on the airlock until you let him in. Once you have collected at least half of your quota of pilots the mother ship will reappear and you can 'boost' back at will — you won't be "promoted" to the next level of play until you have your full quota though. Any extra souls you rescue are worth a healthy bonus as are any 'aces' you pick up — easily noted by their purple helmets.

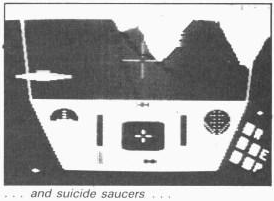
Combat can be quite tricky because of the very light response of the craft, which makes it hard to line up a gun emplacement, or the particularly evasive inertialess saucers that fly at you above level four. It does take a little time for the enemy to lock onto you though, and, since your instruments give you a warning of this, you have time to avoid a hit by breaking off and lining up again.

The game is ended by using up all of your energy or by mistakenly attempting to pick up a Jaggi pilot (green helmets these), who will pound your windscreen in unless you're quick enough to fry him first. If your energy is getting low you can "boost" back to the Mother Ship if you've got enough pilots aboard, or you can use the small bit of energy each pilot carries and minimum thrust to get you to your next target.

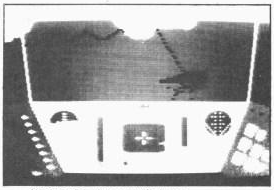
The planet is waiting, your fighter is ready, the Jaggi emplacements are alert . . . do you have the skill and courage to attempt a Rescue on Fractalus? ■



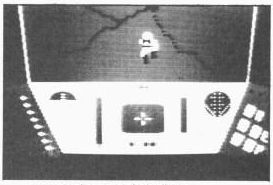
. . . watch for enemy lasers . . .



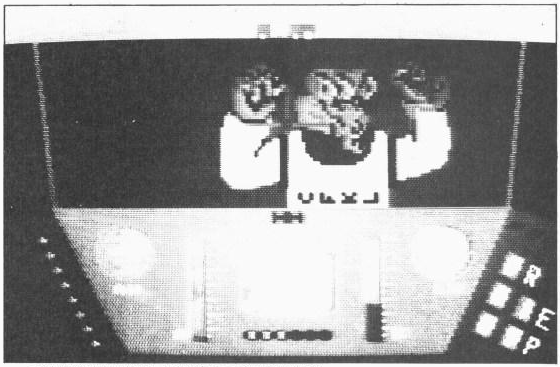
. . . and suicide saucers . . .



. . . locate the downed fighters . . .



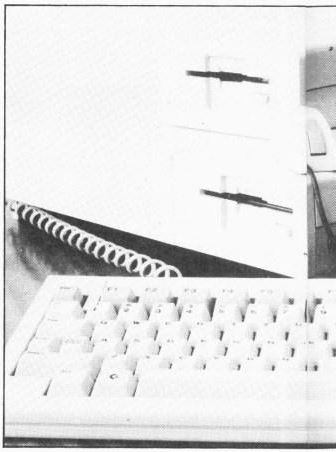
. . . rescue the stranded pilots . . .



. . . and if you're unlucky, move fast to fry the aliens!

AT LAST– AMIGA

Commodore's Amiga computer has been launched in America to an enthusiastic reception. ***Matthew Leeds*** *reports from San Francisco;* ***Chris Jenkins*** *puts the UK view*



COMMODORE International announced on Tuesday, July 23 the formal release of the long awaited AMIGA A1000 PC. In a black-tie gala at New York's Lincoln Center, over 2000 people were treated to an introduction to the computer that many software developers have called 'the start of a new generation'. Commodore hopes the AMIGA will change its image from that of a mass-merchandiser of under $200 game machines to that of a serious business computer manufacturer.

Commodore debuted the AMIGA in San Francisco two days later at SIGGRAPH. The booth was mobbed from the moment the doors opened. In the words of one Commodore staffer, "We expected that we would get a good response, but nothing like this".

There is no question that the AMIGA is a technological leap in both capability and cost. The AMIGA runs the 16/32 bit 68000 microprocessor, of the series found the Apple Macintosh and Sinclair QL, and uses three special chips to control its powerful graphics, sound, windowing, and multi-tasking capability. The first thing you notice while watching the machine in operation is its speed. Since the display is memory mapped video, the CPU does not need to calculate each pixel during every screen refresh. This frees it for other tasks, and the result is fast action in all respects.

The machine comes with 256K of RAM, and has an expansion port dedicated to the addition of another 256K of RAM at the front of the machine. There is also 192K of write protected RAM used to store the operating system. Commodore has said that at some time in the future they might offer ROM chips containing a 'finalized' version of the operating system, however I think that this would be a bad idea. Look at the problems the Mac has had with its locked in BIOS. The upgrade to the new Mac BIOS will require swapping chips, most likely through a dealer. It's far easier to just boot a new version from disk.

The keyboard has ten programmable function keys, two special function keys, a 13 key numeric pad, cursor keys, and a 'help' key. The feel is fairly good, with only a little bounce. There is a caps lock LED. The keyboard is detached, and connects with a standard phone plug. There are little fold down feet, just like on the IBM. In fact, visually the AMIGA looks quite a bit like the IBM PC.

Multitasking

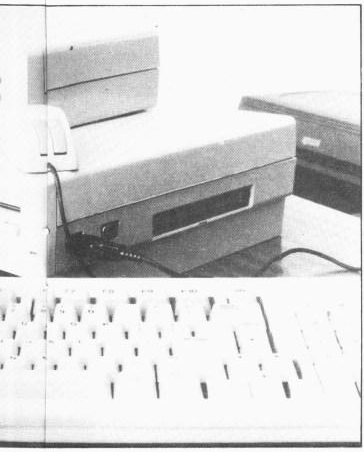
The single 3½ disk drive is built into the main unit. It is a double density, double sided drive, with a formatted storage capacity of 880K. It uses Direct Memory Access read/write for fast data transfer. There is no room in the main unit for additional drives, however it is possible to daisy chain three additional drives, either 3½ or 5¼. More on the 5¼ drive later.

The AMIGA provides a powerful multitasking operating system and a user interface that features multiple windows, multiple screens, icons and menus, fast graphics and animation, great sound, and a two button mouse. The system is expandable to over 8 Mb of RAM.

The display outputs are: RGB, digital or analog, composite video, and RF modulated video for connection to a TV. Recommended display is the RGB analog. Other output ports include a true RS232 serial part, Centronics parallel (reconfigurable), system expansion bus, stereo sound (RCA connectors), and controller ports (mouse, joysticks, graphics tablets, etc.).

The display resolution starts at 320 × 200 in 32 colors, and goes up to 640 × 400 in 16 colors.

Playing some programming tricks, it's possible to get all 4096 colors on the screen at the same



time in 640 × 400 mode,, but you lose quite a bit of speed. There are eight sprites, sixteen pixels wide and any height, with collision and priority controls. The audio specs are: Signal to noise ratio 70 db, distortion less than 1%, frequency response 20-6000 mh, impedence 300 ohms, four channels each capable of playing a full chord, amplitude or frequency modulation or both.

Included with the system will be the operating system software called AmigaDOS, a user interface called Intuition that is icon driven and uses a two button mouse, Microsoft BASIC customized for the AMIGA, a system tutorial on-disk written by Mindscope, and a text to speech package in either a male or female voice with unlimited vocabulary. Also included will be a Command Language Interface for programmers and sophisticated users who prefer direct access to DOS. Dealers will have a choice of bundling a low-res paint program called *Graphicraft* by Island Graphics, and a word processor called *Textcraft* by Arktronics.

Commodore has also announced several peripherals. The A1080 monitor has RGB analog and digital inputs as well as a composite video input. Its bandwith is greater than 10 mh, and it has a .39mm dot pitch. Price will be $495.00. The A1050 modem is Hayes compatible, 1200 or 300 baud, auto answer/dial, with most of the expected "bells and whistles". No price was mentioned.

Emulation

There are also several disk drives available. There are two types of 3½ drives. If you are buying your first additional drive, it will not require a separate power supply, as it will derive its power from the computer. However any additional drives will require their own power supplies, hence two types of drives. Also available is a 5¼ drive, and software that will allow it to read/write MS-DOS format. Commodore has also stated that the software will allow for IBM-PC emulation without the use of a co-processor. That's right, they claim to have run 1-2-3, Flight Simulator, DBase III, MultiPlan, and other packages right off the shelf. Although prices were not being given as 'firm', the additional 3½ drives were quoted at around $300, and the 5¼ at $400.

Several third party hardware developers have announced products for the AMIGA. A-Squared Systems of Oakland, California has produced the AMIGA EYE, a color video digitizer. This device will capture a video image in real time (8 grey levels) or in three frame scans (color) and allows you to manipulate the hue, saturation, luminance and brightness over the computer's full range of 4096 colors. It is fully compatible with all of the paint and graphics software available for the AMIGA.

Digitizing

Kurta Corp. announced the *Penmouse*. This is a battery powered cordless pen that uses a graphics tablet to allow a more natural movement when digitizing drawing or other flat art.

Tecmar has several products available for the AMIGA. The *T-Card* is a multi-function expansion card that can contain up to 1 Meg of additional RAM. It features a serial part, clock/calendar w/ battery backup, hard disk interface, parallel printer port, and has its own power supply. The *T-Disk* is a 20 Meg 3½ inch hard disk for the AMIGA. The *T-Tape* is a 20 Meg tape backup unit that can be linked to the AMIGA through a floppy disk port. It has its own power supply. Tecmar also announced the *T-modem*, a Hayes compatible modem with selectable 300, 1200, or 2400 baud rates.

Games

There is also quite a bit of software for the AMIGA. Word processing, database, spreadsheet, business graphics, accounting, and telecommunications packages are either available on release of by year's end. Several languages and programming tools have also been announced. Lattice, Inc's compiler, MS-DOS cross compiler, UNIX cross compiler, VAX cross compiler, LMK, LSE, and IMN will be available at once as will TLC-LOGO from The Lisp Company. Metacamco is releasing an AMIGA assembler/linker, Cambridge LISP 68000, and MCC Pascal 6800.

The AMIGA is a wonderful game machine. Electronic Arts will release over a dozen titles by Christmas, six of which will be written just for the AMIGA. Sublogic has a new flight simulator called *'Radar Raiders'*, Mindscape has a mystery game called *'Deja Vu'*, and Hayden has put out *'Sargon III'* with nine levels of play and a library of over 68,000 moves.

Music software will reach new highs on the AMIGA's four channel stereo sound. Cherry

FORTHCOMING SOFTWARE

Cherry Lane Technologies	Harmony	Background music
"	Scorewriter	Music printing
"	Musicraft	Music teaching
"	Texture	Music sequencing
Island Graphics Corp	Graphicraft	Paint program
Broderubund	Print Shop	Personalised printing
A-Squared	Amiga Eye	Colour video digitiser
Metacomco	Assembler	Macro-assembler
"	LISP 68000	AI language
"	Pascal	Language compiler
Borland Int'l	Pascal	High-speed Pascal
Lattice, Inc	Lattice C	Language compiler
"	C/IBM MS/DOS	Cross-compiler
"	C/Unix	Cross-compiler
"	C/Vax	Cross-compiler
"	LMK	Software development tool
"	LSE	Multi-language screen editor
"	TMN	Text file handling
The Lisp Company	TLC Logo	AI and turtle graphics
Infocom Ltd	Interactive fiction	Complete range of adventure games
Electronic Arts	Skyfox	Arcade game
"	Marble Madness	"
"	One-on-One	Basketball game
"	Archon	Chess-type game
"	Atlantis	Undersea adventure
"	7 Cities	Conquistador simulation
Hayden Software Co	Sargon 3	Chess simulation
Mindscape Inc	Deja Vu	Graphics adventure
"	Halley Project	Space mission simulation
Sublogic Corp	Radar Raiders	Battle flight simulation
Island Graphics Corp	Moviecraft	Animated drawing
"	EnableFile	Database
"	EnableCalc	Spreadsheet
"	Manager	Office management
"	EnableWrite	Word processing
Chang Laboratories	Rags to Riches	Accounting packages
Arktronics	Textcraft	Word processing
Synapse Software	CalCraft	Spreadsheet
Electronic Arts	Video Set	Animated graphics

Lane Technologies will release several music creation packages. Sequencing, scoring, editing, and printing musical compositions will be supported. MIDI interfaces will also be available. The AMIGA has powerful sound sampling capabilities, and there has been talk of a digital sound sampler. Marc Aaron Canter of MacroMind (Videoworks for the Moc) says that with the proper software, the AMIGA should be at least as good as the *Ensoniq Mirage* digital sound sampling keyboard.

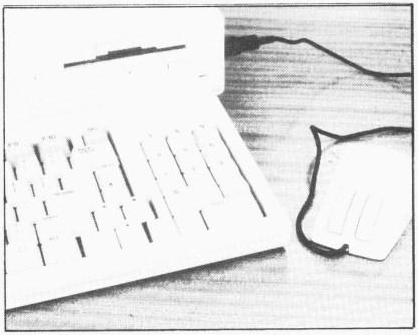
Distribution of a high end computer may be a problem for Commodore. Dealers are wary of getting burned after Commodore cut the price of the C64 from $595 to $200 and sold it through mass merchandisers. Although Commodore has made no announcements on a dealer network, Frank Leonardi, Commodore vice president of sales/business has been meeting with members of the Association of Better Computer Dealers (ABCD) and promising that the AMIGA will be kept out of mass market channels. The AMIGA will need computer speciality retailers for proper end-user support and it would be self destructive for Commodore to allow mass market merchandisers to sell it.

One solution to the marketing problem is Value Added Resellers (VAR). These dealers integrate hardware and software into vertical market systems that meet specific needs. The potential applications of such systems is limited only by the imagination of programmers and developers. Architects, motion picture and television producers, fashion and textile designers, map and chart producers, typesetters, and CAD/CAM applications are but a few of the possibilities. Interior designers, landscapers, musicians, art directors, commercial artists, engineers, and educators will find a variety of unique applications waiting for their use. The AMIGA brings the power and speed of computers costing ten times as much within the reach of small businesses.

Commodore is already 'not talking' about the AMIGA II, a multi-user system that will address the needs of big business. There is currently no local area network capability for the AMIGA, and a new computer using the

TECHNICAL DATA AMIGA™

Microprocessor	● 68000 Motorola
Speed	● 7.16 MHz
Memory	● 256K RAM 192K ROM
Expansion	● Up to 512K internal Up to BM external
Disk capacity	● 880K 3½ inch
Display	● RGB analog/digital Composite video RF modulated (TU)
Color	● 4096 possible
Resolution	● 320 × 200 320 × 400 640 × 200 640 × 400
Keyboard	● 89 keys Numeric keypad
Music	● 4 channels Stereo
I/O Ports	● RS232 Centronics parallel External disk drive Controller ports (2) 2 button mouse joysticks Light pen Graphics tablet Optical scanner Game paddles Video RF RGB Graphics expansion bus System expansion bus Audio (2) stereo Keyboard
Speech synth	● Yes (text to voice) Male or female voice
Software	● Amiga DDS Intuition overlay ABasic System tutorial
Additional langauges available	● Pascal, Logo, C, Assembler, etc.
Additional peripherals available	● 256K RAM pack Frame grabber (color) Digitizing tablet MIDI interface Hayes compatible modem 3½ inch drive 5¼ inch drive w/ MS-DDS R/W capability Hard disk w/ tape backup 1M RAM multi/function expansion board



● Suggested price without monitor: $1295.00. ● Availability is anticipated in the UK in January. ● No price details yet available.

68020 would fit the bill nicely.

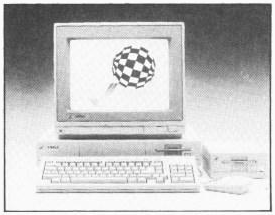
What this all adds up to is a colour Macintosh with 512K RAM, MS-DOS capability, true multi-tasking, stereo sound, and an open architecture for for under $2500.00. Commodore has committed itself to releasing all the technical specs and info that third party developers need. The expansion bus has full access to the 68000, and there are no design imposed limits to the potential of the machine. There will be a lag in the release of some software that you might want, but with access to the MS-DOS library, I would imagine that most users will survive until applications that take full advantage of the AMIGA's capabilities arrive. Commodore has come up with a winner. ■

UK VIEW

COMMODORE'S AMIGA may be the first machine to live up to the promise of the personal computer concept.

Based around a graphics chip, designed by the Amiga Corp which was then bought out by Commodore, the Amiga has now developed into an open-ended, incredibly powerful system based on the popular 68000 microprocessor.

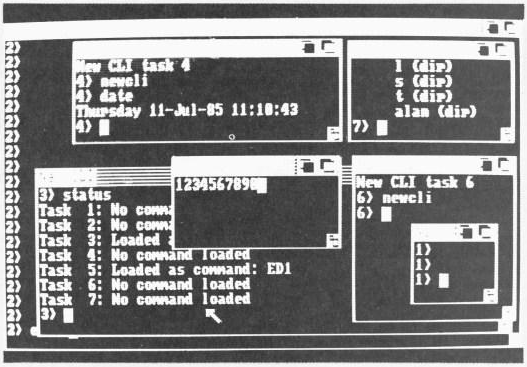
The aspect of the Amiga which makes it



so much better than the Macintosh, QL, or IBM PC, is the design effort put into the three custom chips codenamed Agnus, Daphne and Portia. These handle the memory control, input/ output and screen routines, allowing the central processor to operate much faster.

Some of the hardware possibilities are even more impressive — IBM emulation good enough to run Lotus 1-2-3, D-Base and WordStar, completely open architecture enabling you to connect disk drives, printers, modems, video sources, a mouse, joysticks, lightpens, MIDI interfaces, memory expansions, and so on.

The operating system AmigaDOS, an adaptation by Metacomco of its Cambridge Tripos, sets no limitations to the number of files or directories the machine can handle, and supports the *Intuition* windows/ icons/mouse working environment. Offering powerful processing and a wide range of options to the small business user, uniquely powerful graphics and sound to the creative programmer, and a nearly religious experience to the games player, the Amiga seems to be all things to all men. At last the promise held out by the home computer industry, of a machine combining work, play, education, communication and creative features in one package, seems to have been fulfilled. ■



ABasiC and AmigaDOS

Metacomco's contribution to Commodore's machine

***Chris Jenkins** comments*

IN LESS than six months, Bristol-based Metacomco developed AmigaDOS, the Amiga's advanced disk operating system, ABasiC, the powerful language package, and a range of other software systems including assemblers, linkers, and versions of languages including Lisp and Pascal.

Metacomco specialises in 68000-based packages, and based the Amiga's multi-tasking operating system on an existing development, the Tripos package.

Founded in 1981, the company's first product was a Basic interpreter for the 8086, running on machines such as the IBM PC. Marketed by Digital Research as "Personal Basic", this product proved highly successful. Metacomco hope that AmigaDOS will become a standard operating system for 68000-based machines, since it takes advantage of the power inherent in the microprocessor, yet is compact enough for personal computers to use.

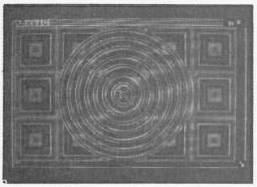
Metacomco's development team was led by Dr Tim King, who demonstrated AmigaDOS and ABasiC to a small number of journalists at Metacomco's Bristol offices.

AmigaDOS is essentially a multi-tasking system. This means that while the disk system is taking care of routine data transfer, the user can be carrying out a number of independent operations.

The illustration shows a screen with seven tasks running simultaneously. Note that task three, the lower left hand window, is showing the status of each task. For instance, task five (centre screen) is a screen editor. You could, for instance, search for an address in an address file while word processing in another window; the hierarchical filing system keeps files in multi-level directories.

AmigaDOS has many user-friendly features; for instance, the LIST command tells you the size and status of each file, and the date and time it was filed. There is also a wide range of error messages, and typing WHY will expand on the error; for instance, while renaming files, CAN'T RENAME PETER AS FRED might arise, and typing WHY would produce, for example, LAST COMMAND FAILED BECAUSE OBJECT NOT FOUND.

ABasiC, which is to be sold as a separate option with the Amiga, is more advanced than the Microsoft Basic which will be bundled with the machine. It includes commands to handle the Amiga's powerful digital sound capabilities, low-res graphics, and hi-res graphics, as well as all the stand-



ard programming commands one would expect of an advanced high-level language.

For instance, a few lines of ABasiC can allow you to define a box on the screen, tell the Amiga to monitor the input from the mouse, then print to the screen in such a way that moving the mouse draws graphic patterns. You can also control the hi-res graphics, phasing through the available colours and copying your pattern all over the screen to create some stunning effects.

Metacomco's contribution to the Amiga may be just as important as the machine's revolutionary hardware designs in making it the success it seems certain to be. ■

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Creative

On the right track

***Tony Mills** plays around with the joystick-controlled 64 music program*

MUSIC STUDIO isn't the first piece of 64 software to allow you to synthesise sounds using the SID chip. It also isn't the first to allow composition of three-part harmonies on a musical stave. It also isn't the first to come on cassette, still the most popular format in the UK despite the obvious advantages of disks.

So what does The Music Studio offer that the others, such as **MusiCalc**, **Music Master** or **Ultisynth**, cannot? In a word — integration. Apart from Island Logic's stylish **Music System** package, Music Studio is the only single package to combine synthesis, composition, education, printouts and lyric entry on one cassette.

Furthermore, The Music Studio is supremely user-friendly, controlled by joystick and a system of icons which is very easy to pick up. Using a joystick (or Koala Pad), you can move between the three main screens by moving the "baton" to the appropriate icon and pressing the fire button.

Editor

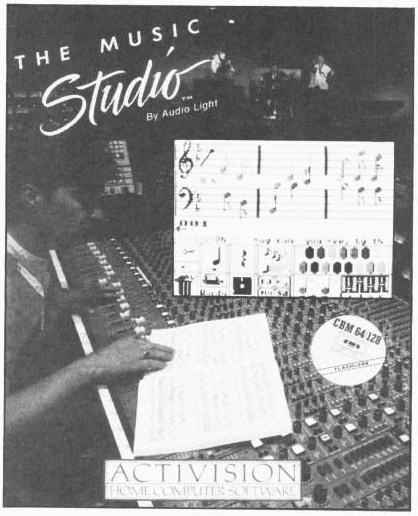
The first screen is The Music Editor. This allows you to create, edit and print music and lyrics, and is suitable for quite advanced musicians. To write tunes, you simply pick up a note from the menu available, and place it at the appropriate point on the musical stave (in case you don't understand musical terminology such as "stave", "Bar", "key" and so on, there's a good Introduction to Music in the manual.)

You can hear the note you're placing as you move the symbol up and down the staff, and select the length from one sixteenth to one whole note. Once you've placed the note, a green bar shows how far you've progressed in your composition. You can enter up to three notes ("voices") in any column.

It's then possible to erase whole notes or blocks, change key, change instrument sound, and so on, still by simply selecting options from the menu of icons.

Rests, sharps, flats, and measure bars are equally easy to insert or delete. You can then add lyrics to your song, and save to disk or tape, or print out with a suitable Commodore printer.

The Sound Engineering screen is one of the cleverest parts of the program, representing very closely the appearance of a synthesiser control panel. All the parameters of the SID chip can be set by moving the "switches", "sliders" and "knobs". As most of you will know, the SID chip has many of the facilities of real synthesisers — envelopes, filters, modulation, white noise, and so on, so all kinds of realistic and abstract sounds can be created and saved for later use. Incidentally, up to fifteen sounds can be used in any composition.



Painted notes

Lastly, we come to The Music Paintbox, which will be the section of most interest to musical beginners. Like The Music Editor, this section allows you to create complex tunes by placing notes on a stave, but in this case there is no standard musical notation used, so you need no technical knowledge to compose. Notes are "painted" onto the staff using coloured rectangles, where the size determines the note length and the colour determines the instrument sound. A Paintbox composition can be easily transformed into standard notation, which is an excellent learning aid.

Experiment

There are plenty of utilities on the disk version which enable you to rename, delete, append, and initialise new disks, so it's easy to build up a complete library of sounds and tunes on disk. Things aren't quite so easy on the tape version, but that's to be expected.

There's plenty more to experiment with in The Music Studio; tempo, bar repeats, volume, block copying, and so on. As the manual points out, it might be a cliché, but it's true that "practice makes perfect". With a little practice on The Music Studio, you should soon be turning out your own little musical masterpieces. ■

Software: The Music Studio
Micro: CBM64
Supplier: Activision, 15 Harley House, Marylebone Road, London NW1, 01-935 1428
Price: Cassette £14.99, disk £19.99

IN OUR July issue we gave you the chance to win copies of Activision's arcade game Master of the Lamps, and The Music Studio. All you had to do was to decipher the song title hidden on the magic gongs and complete the tie-breaker sentence. Of the hundreds of entries, most got the song title right — "Midnight at the Oasis" — so the winners were chosen for the quality of their tie-breakers. Most popular was "Activision games are magic because... the programmers are GENIE-uses!" Some of you managed to come up with alternatives, though; and the complete list of winners is: (Master of the Lamps and The Music Studio) — M Hodgetts, Birmingham; A Walsh, Manchester; D Constable, Bedford; G W Jones, BFPO 24; N M Spragg, Evesham; R J Phillips, Aylesbury; T Whitehead, Tadworth; J Keltie, Glasgow; J Ruddy, Goarbridge; J Bolland, Lymm; (Master of the Lamps only) — R Barnes, Gillingham; M Ashenden, Coombe Bisset; A Burge, Crawley; P Brown, Mayhull; R Palmer, Stafford; G Owen, Nottingham; F Walden, Havant; M Wilson, Sheffield; J Tingey, Newbury; C A Smith, Tewkesbury.

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MINTER MANIA

*What's **Yak the Hairy** been up to this month? Freaking out on lasers, drooling over the Amiga, and writing Syncro 2 just for you . . .*

WELL, TIME to fire up the Apple an' do another of these columns for you lot. Kept me busy has Commodore Horizons the past few days, coz I been writing 'Syncro II' to be published as a listing . . . still, I saved meself a bit o'work too, 'cos Sync II is going to be used as the basis of a subsystem of a game I'm writing at the moment. Play about with the music option — it's quite strange and pleasing in an odd way, it sounds a bit like someone just tinkering with a synthesiser. Fine for those who haven't got a synthesiser to tinker with!

Laser Zone

Speaking of synths, what about that new **Amiga** from Commodore, huh? I been reading the specs an' just drooling. Seems that it's got a full sampling synth capability . . .means you can play any noise you like into the system (the sound of a can of Coke opening or your joystick breaking or your disk drive committing a read error, or just anything) and then make a tune out of it — play it back at any pitch, forwards, backwards, whatever. Those of you with that speech system from Anirog will know the sort of stuff I'm on about — but on the Amiga, with all that RAM, the quality of the sample will be much, much better. Still, the Anirog device is a good start for those of you who want to play around with sampling, but can't quite afford the Amiga! I must pick one up meself, next time I'm in town . . . which'll be tomorrow, actually: see, Yak an' mates have taken to regular trips to the Laserium, in London. I must give the Laserium a generous plug here, 'cos it is SO good. It's in the London Planetarium dome, an' you go along there of an evening and they play either Pink Floyd, or else a compilation of modern rock (depends which day you go) . . . and blow your mind with a really a-maaazing laser show, projected into the inside of the dome. When it's all over it takes a while to return to Planet Earth . . . there was a massed invasion of Compunetters the other day, Tony Crowther came down from Sheffield, we met up for a blast of the arcade machines in Leics Square and then hit the Laserium for a really great evening. If you get to London do give the Laserium a try. It's well worth it.

I've got my 64 rigged thru my stereo at the moment . . . have any of you got that **Hyper Sports**? The game itself is an excellent copy of the arcade game of the same name, but the reason I load it is just to listen to the loading music an' put it thru my stereo. That music is brilliant. It sounds almost as good as my Yamaha CX5M synth. It's the only game I've ever come across where I probably get more pleasure from listening to it load than from the actual playing. (Not that the game is at all bad! far from it — it's just that the loading theme is really amazing) . . . My sound-effect-

of-the-month has to be the 'sproingggg!' out of **Thing on a Spring**. Lovely sonic, really Zebedee-ish.

I still love my Atari 520, despite the fact that I don't have a colour monitor yet. Pity, 'cos I'd've liked to do a bit of light syntheiser to show at the PCW Show. Atari keep saying to me that they don't see why I need colour to get started, why can't I start in black and white? Writing a light synthesiser in black and white would be a bit like learning to play the guitar but not being allowed any strings! — theoretically possible, but very, very difficult . . . When I get me Amiga I hope Commodore are forthcoming with the colour monitors! Ooo, back to the Amiga again . . . promises

Machine. Think of all the features you ever wanted and there they are. Still, it don't come cheap, an Amiga with colour monitor (which you'll really need to appreciate the capabilities) will be about a grand-and-a-half I reckon. for that reason I don't see the Amiga bothering the Atari ST too much — the base-level 256k ST will only be about £350, providing a cheap and extraordinarily powerful entry into the 16-but world. 68000, we love you . . .

Commodore's 128 should be available soon — and much cheaper than I forecast last time. At £269 it's really good value. If you want the extra RAM and Basic 7.0 you get them, plus you can keep all your 64 games. Nice to see the big C getting it right.

By the time you read this **Rescue on Fractalus** should be out in the shops, for both 64 and Atari, out of Activision. Definitely worth getting on the Atari, but I should check out the CBM version first to check that it hasn't lost too much speed in the conversion. I haven't seem it yet so I can't comment on the '64 version, although Activision are just starting to advertise it — and quoting me on their adverts! Cheeky! They didn't even ask me! Still, Fract on the Atari is good. I do hope the 64 version is, too.

Sonixx

In the Oldies-but-Goodies dept. now — does anyone remember **Stix** from Supersoft? This is a version of the arcade game Qix — a strange, abstract creation . . . the Yak and the 2-Toed Sloth spent until half-5 in the morning consuming quantities of Newcastle Brown and playing this one, the other night. The game is very simple by today's standards — no flashy intro, no tune, just these weird abstract sonnixx, but we found it to be very addictive. Just the sort of thing you might see in the Reduced-to-Clear section in one of those infernal chain stores. Try it — maybe you'll like it.

Things to Do for Commodore Owners this month:

(1) Sit in a dark room. Place some Iron Maiden on your stereo, whack it up REALLY LOUD and sit and play **Dropzone**.

(2) Get a modem and hold a Hi-Phone-Bill competition.

(3) Get a mate round and race his turbo-tape loader against the Commodore disk drive.

(4) Get knocked over by the ball again at **Rocketball**.

(5) Drool over the Amiga.

That's all for this month — I have my game to finish, and some late-nite Netting t'do tonite. Next month — who knows? I should have seen a lot more of the latest stuff — and finished my own latest too I hope — and Dio's new album will be out!!! This is the Yak, shuttin' down the Apple and loggin' on the Net . . . ■

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SYNCHRO

WHEN YOU run the game, the first option is to set the skill level. You do this by using the F7 key. Press F1 to start off the game when you're ready.

Game Objective: The objective if the game is to match the velocity of the moving 'tiles' on the display in such a way as to render static all the little spheres that're boucing around the screen.

Controlling the Game: Using the Joystick in port 2 **without** the button pressed moves the selection cursor over the grid of tiles. Pressing the FIRE button, and leaning on the stick, allows you to alter the velocity of the currently-selected tile. All tiles of the selected design have their velocities adjusted accordingly.

Scoring occurs when all the spheres have been rendered static. You receive bonus points depending on how much time remains, and the game proceeds to the next round/level. (There are two rounds per level and four levels in all.)

The timer is situated at the left of the screen. You should complete the wave before the timer runs out.

Drifting: A sphere, once static, will only stay that way for a limited period of time, after which it will drift off. Hurry to complete the wave before spheres you captured earlier drift away.

Hints: The first time you try it you won't know what the hell's going on. Use only a single sphere at first. Once you realise what you're trying to do, try with four or five! Or else, just forget the game and play about with the rather unusual sound track.

Practise: you can practise during game-over stage, but no points are attributed to your score and no progress is made through the levels.

This game, in a slightly enhanced version, will appear as subgame 5 in my forthcoming game BATALYX.

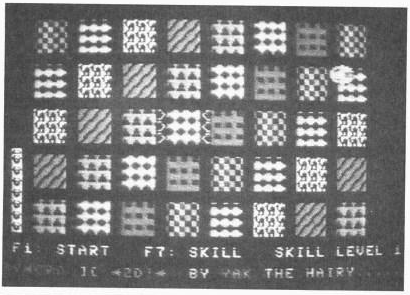
```
10 REM********** SYNCRO II **********
20 REM*** A JEFF MINTER PRODUCTION  ***
30 REM*** BASIC LOADER PRODUCED FOR ***
40 REM*** COMMODORE HORIZONS BY     ***
50 REM*** JOHN COCHRANE             ***
60 REM***---------------------------***
70 REM*THIS LOADER AUTO-SAVES CODE TO *
80 REM*TAPE OR DISC WHEN NO ERRORS.   *
90 REM*LOAD AND RUN AS A NORMAL PROG. *
100 REM*************************************
110 CK=0
120 FOR AD=49153 TO 52749
130 READ B:POKE AD,B:CK=CK+B
140 NEXT
150 IF CK<>348822 THEN PRINT
    "*CHECKSUM ERROR...":STOP
160 POKE 49152,0:POKE 44,192:
    POKE 45,14:POKE 46,206
170 SAVE "SYNCRO II":REM ,8 FOR DISC
180 POKE 44,8:CLR:STOP
190 DATA15,8,207,7,158,50
200 DATA48,54,53,32,89,65,75,0
210 DATA0,0,234,234,234,234,234,169
220 DATA54,133,1,76,114,21,27,27
230 DATA27,49,189,96,22,157,0,50
240 DATA202,208,229,169,0,141,4,212
250 DATA141,11,212,141,18,212,141,5
260 DATA212,141,12,212,141,19,212,169
270 DATA1,141,248,16,141,247,16,141
280 DATA147,16,169,3,141,246,16,169
290 DATA15,141,24,212,169,33,141,4
300 DATA212,141,11,212,141,18,212,169
310 DATA240,141,20,212,141,13,212,141
320 DATA6,212,76,89,9,0,4,27
330 DATA169,4,133,3,169,0,133,2
340 DATA162,24,160,0,165,2,153,64
350 DATA3,165,3,153,96,3,165,2
360 DATA24,105,40,133,2,165,3,105
370 DATA0,133,3,200,202,208,229,96
380 DATA172,108,8,174,109,8,189,64
390 DATA3,133,2,189,96,3,133,3
400 DATA173,111,8,145,2,165,3,24
410 DATA105,212,133,3,173,110,8,145
420 DATA2,96,0,0,169,3,141,186
430 DATA8,169,3,141,187,8,32,152
440 DATA8,238,108,8,206,187,8,208
450 DATA245,206,108,8,206,108,8,206
460 DATA108,8,238,109,8,206,186,8
470 DATA208,223,96,2,8,7,5,14
480 DATA4,6,0,160,0,177,4,24
490 DATA105,64,141,111,8,177,4,170
500 DATA189,227,8,141,110,8,152,41
510 DATA7,10,10,24,105,4,141,108
520 DATA8,152,106,41,60,141,109,8
530 DATA152,72,32,188,8,104,168,200
540 DATA192,40,208,209,96,162,0,169
550 DATA32,157,0,4,157,0,5,157
560 DATA0,6,157,0,7,169,1,157
570 DATA0,216,157,0,217,157,0,218
580 DATA157,0,219,202,208,225,169,255
590 DATA141,28,208,169,0,141,29,208
600 DATA141,23,208,141,149,16,169,6
610 DATA141,37,208,169,14,141,38,208
620 DATA96,120,32,29,9,32,113,15
630 DATA32,6,19,32,112,8,32,31
640 DATA10,32,25,15,32,190,10,32
650 DATA127,17,32,249,16,32,235,8
660 DATA88,32,150,16,76,121,9,0
670 DATA5,27,1,1,1,2,2,2
680 DATA3,5,27,4,5,27,5,5
```

RO 2 by JEFF MINTER

ENTERING the listing is quite straightforward. Type the whole program into your 64, remembering to add ,8 after the program name in line 170 if you want to saved to disk.

Then RUN the program. Have a blank disk or tape ready, as John Cochrane's AUTOSAVE program will then save Syncro || for you. If you have made an error typing the listing in, the checksum routine will prevent it from saving.

When the program has saved, switch your machine off and on, then load Synchro || from tape or disk as normal. The game will auto-run.




```
690 DATA5,6,6,6,0,5,27,1
700 DATA5,27,2,2,2,0,1,2
710 DATA3,4,5,6,0,1,2,3
720 DATA4,5,6,0,1,2,3,4
730 DATA5,6,0,1,2,3,4,5
740 DATA6,0,1,2,3,4,5,6
750 DATA0,1,2,3,4,0,9,27
760 DATA1,2,1,2,1,2,0,0
770 DATA3,4,3,4,3,4,0,0
780 DATA5,6,5,6,5,6,0,12
790 DATA27,1,1,0,0,0,2,2
800 DATA3,4,4,3,2,2,5,6
810 DATA7,4,27,6,5,2,2,3
820 DATA4,4,3,2,2,0,0,0
830 DATA1,1,0,0,0,169,0,141
840 DATA32,208,141,33,208,169,24,141
850 DATA24,208,96,138,72,189,25,11
860 DATA240,26,170,160,0,177,6,72
870 DATA200,177,6,136,145,6,200,192
880 DATA7,208,245,104,145,6,202,208
890 DATA234,104,170,72,189,33,11,240
900 DATA24,170,160,7,177,6,72,136
910 DATA177,6,200,145,6,136,208,247
920 DATA104,145,6,202,208,236,104,170
930 DATA72,189,17,11,240,21,170,160
940 DATA0,177,6,10,105,0,145,6
950 DATA200,192,8,208,244,202,208,239
960 DATA104,170,72,189,9,11,240,21
970 DATA170,160,0,177,6,24,106,144
980 DATA2,9,128,145,6,200,192,8
990 DATA208,241,202,208,236,104,170,96
1000 DATA162,0,169,34,133,7,189,182
1010 DATA10,133,6,32,45,10,232,224
1020 DATA8,208,239,96,0,8,16,24
1030 DATA32,40,48,56,120,173,17,208
1040 DATA41,127,141,17,208,169,192,141
1050 DATA18,208,169,1,141,25,208,141
1060 DATA26,208,169,228,141,20,3,169
1070 DATA10,141,21,3,169,127,141,13
1080 DATA220,96,32,58,16,32,205,17
1090 DATA32,182,11,32,86,13,32,133
1100 DATA18,32,162,10,32,65,19,169
1110 DATA255,141,18,208,169,1,141,25
1120 DATA208,141,26,208,76,49,234,0
1130 DATA32,27,173,190,11,10,10,24
1140 DATA105,3,141,108,8,173,191,11
1150 DATA10,10,141,109,8,169,62,141
1160 DATA111,8,174,192,11,189,56,12
1170 DATA141,110,8,32,152,8,238,109
1180 DATA8,32,152,8,238,109,8,32
1190 DATA152,8,173,108,8,24,105,4
1200 DATA141,108,8,169,60,141,111,8
1210 DATA32,152,8,206,109,8,32,152
1220 DATA8,206,109,8,32,152,8,96
1230 DATA173,190,11,10,10,24,105,3
1240 DATA141,108,8,173,191,11,10,10
1250 DATA141,109,8,169,32,141,111,8
1260 DATA32,152,8,238,109,8,32,152
1270 DATA8,238,109,8,32,152,8,173
1280 DATA108,8,24,105,4,141,108,8
1290 DATA32,152,8,206,109,8,32,152
1300 DATA8,206,109,8,76,152,8,206
1310 DATA188,11,240,7,96,3,255,0
1320 DATA0,0,4,169,3,141,188,11
1330 DATA32,119,11,173,0,220,141,189
1340 DATA11,238,192,11,173,192,11,41
1350 DATA7,141,192,11,173,189,11,41
1360 DATA16,240,80,173,189,11,41,1
1370 DATA208,15,206,191,11,173,191,11
1380 DATA201,255,208,5,169,4,141,191
1390 DATA11,173,189,11,41,2,208,15
1400 DATA238,191,11,173,191,11,201,5
1410 DATA208,5,169,0,141,191,11,173
1420 DATA189,11,41,4,208,11,206,190
1430 DATA11,173,190,11,41,7,141,190
1440 DATA11,173,189,11,41,8,208,11
1450 DATA238,190,11,173,190,11,41,7
1460 DATA141,190,11,32,64,12,76,41
1470 DATA11,0,11,12,15,1,15,12
1480 DATA11,206,70,12,240,2,96,3
1490 DATA169,3,141,70,12,173,189,11
1500 DATA41,16,240,1,96,173,191,11
1510 DATA10,10,10,13,190,11,168,177
1520 DATA4,170,173,189,11,41,1,208
1530 DATA28,32,217,18,189,33,11,240
1540 DATA6,222,33,11,76,132,12,254
1550 DATA25,11,189,25,11,205,193,11
1560 DATA208,3,222,25,11,173,189,11
1570 DATA41,2,208,28,32,234,18,189
1580 DATA25,11,240,6,222,25,11,76
1590 DATA167,12,254,33,11,189,33,11
1600 DATA205,193,11,208,3,222,33,11
1610 DATA173,189,11,41,4,208,25,189
1620 DATA9,11,240,6,222,9,11,76
1630 DATA199,12,254,17,11,189,17,11
1640 DATA205,193,11,208,3,222,17,11
1650 DATA173,189,11,41,8,208,23,189
1660 DATA17,11,240,4,222,17,11,96
1670 DATA254,9,11,189,9,11,205,193
1680 DATA11,208,3,222,9,11,96,1
1690 DATA2,4,8,16,32,64,128,189
1700 DATA230,12,73,255,45,21,208,141
1710 DATA21,208,96,138,10,168,189,62
1720 DATA13,240,236,10,153,0,208,144
1730 DATA12,189,230,12,13,16,208,141
1740 DATA16,208,76,31,13,189,230,12
```

```
1750 DATA73,255,45,16,208,141,16,208
1760 DATA189,70,13,153,1,208,189,78
1770 DATA13,157,248,7,172,192,11,185
1780 DATA56,12,157,39,208,189,230,12
1790 DATA13,21,208,141,21,208,96,0
1800 DATA48,0,80,0,4,27,32,48
1810 DATA64,80,96,112,128,144,192,193
1820 DATA194,195,196,197,198,199,162,0
1830 DATA169,0,13,149,16,141,148,16
1840 DATA32,250,12,189,62,13,240,9
1850 DATA32,150,13,32,149,14,32,26
1860 DATA14,232,224,8,208,234,173,148
1870 DATA16,208,10,173,147,16,208,5
1880 DATA169,1,141,149,16,96,0,3
1890 DATA0,1,0,5,27,255,0,1
1900 DATA0,4,27,222,255,13,208,53
1910 DATA169,2,157,255,13,32,7,14
1920 DATA189,62,13,24,125,134,13,157
1930 DATA62,13,41,248,201,8,240,4
1940 DATA201,152,208,25,189,134,13,73
1950 DATA255,24,105,1,157,134,13,189
1960 DATA133,14,73,255,24,105,1,157
1970 DATA133,14,76,163,13,189,70,13
1980 DATA24,125,142,13,157,70,13,41
1990 DATA240,201,16,240,5,201,208,240
2000 DATA1,96,189,142,13,73,255,24
2010 DATA105,1,157,142,13,189,141,14
2020 DATA73,255,24,105,1,157,141,14
2030 DATA76,208,13,96,1,8,27,254
2040 DATA78,13,189,78,13,201,202,240
2050 DATA1,96,169,192,157,78,13,96
2060 DATA0,0,138,72,189,62,13,208
2070 DATA3,104,170,96,56,233,8,106
2080 DATA106,41,63,141,24,14,189,70
2090 DATA13,56,233,44,106,106,106,41
2100 DATA31,24,105,0,141,25,14,172
2110 DATA24,14,174,25,14,189,64,3
2120 DATA133,2,189,96,3,133,3,177
2130 DATA2,201,32,240,45,56,233,64
2140 DATA141,24,14,41,248,208,35,173
2150 DATA24,14,168,104,170,72,185,9
2160 DATA11,24,125,133,14,56,249,17
2170 DATA11,157,134,13,185,33,11,24
2180 DATA125,141,14,56,249,25,11,157
2190 DATA142,13,104,170,96,0,3,0
2200 DATA1,0,5,27,255,0,1,0
2210 DATA4,27,189,134,13,240,6,169
2220 DATA1,141,148,16,96,189,142,13
2230 DATA208,245,189,212,14,208,9,32
2240 DATA229,14,169,255,157,212,14,96
2250 DATA201,255,208,15,173,228,14,157
2260 DATA212,14,169,0,157,220,14,32
2270 DATA253,17,96,254,220,14,208,3
2280 DATA222,212,14,169,11,157,99,208
2290 DATA96,255,8,27,105,13,32,245
2300 DATA14,41,7,56,7,32,18,15
2310 DATA41,7,56,233,3,201,4,208
2320 DATA2,41,3,9,1,157,133,14
2330 DATA157,134,13,32,18,15,41,7
2340 DATA56,233,3,201,4,208,2,41
2350 DATA3,9,1,157,141,14,157,142
2360 DATA13,96,173,0,239,238,19,15
2370 DATA96,169,6,133,9,169,250,133
2380 DATA8,160,0,162,19,165,8,56
2390 DATA233,40,133,8,165,9,233,0
2400 DATA133,9,169,72,145,8,202,208
2410 DATA236,141,61,15,96,0,120,165
2420 DATA1,41,251,133,1,162,0,160
2430 DATA3,189,0,208,192,2,208,2
2440 DATA41,15,157,0,32,189,0,209
2450 DATA192,2,208,2,41,15,157,0
2460 DATA33,200,152,41,7,168,202,208
2470 DATA224,165,1,9,4,133,1,88
2480 DATA96,32,62,15,162,40,189,153
2490 DATA15,41,63,157,111,7,189,193
2500 DATA15,41,15,157,111,219,189,233
2510 DATA15,41,63,157,191,7,189,17
2520 DATA16,41,15,157,191,219,202,208
2530 DATA221,96,32,83,89,78,67,82
2540 DATA79,32,93,91,32,42,50,68
2550 DATA33,42,32,32,66,89,32,89
2560 DATA65,75,32,84,72,69,32,72
2570 DATA65,73,82,89,46,5,27,32
2580 DATA32,68,6,27,32,71,71,32
2590 DATA67,5,27,32,32,65,65,32
2600 DATA68,68,68,32,65,65,65,32
2610 DATA65,10,27,32,32,32,82,79
2620 DATA85,78,68,58,32,48,32,32
2630 DATA76,69,86,69,76,58,32,48
2640 DATA32,32,32,83,67,79,82,69
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3220 DATA251,17,173,252,17,141,32,208
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3520 DATA15,212,96,238,130,18,173,130
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Plus/4 adding up?

Although one major selling-point of the Plus/4 is its ROM software, most owners want to supplement the 3+1 suite with programs on disk or tape. ***John Cochrane*** *looks at some of the few products available*

SOFTWARE of any sort for the Commodore C16 and Plus/4 machines is thin on the ground. Utility software is almost non-existent, which makes the recent crop of programs for these machines particularly pleasing. The value for money offered by the C16, and even more so by the Plus/4 if you are prepared to shop around a little, is sadly let down by a lack of commercial software, so any new software is very welcome.

Accounts

Company Pac 1.2.3 by Impex Software is for the Plus/4 only, and a disc drive and printer are also required. The package is intended for keeping accounts, stock control, and the printing of invoices and credit notes. Commodore think highly enough of Company Pac 1.2.3 to set up a special all-in-one deal around it consisting of a Plus/4, a 1541 disc drive, an MPS-801 printer, and the Company Pac 1.2.3 software for £449. Alternatively Company Pac 1.2.3 is available by itself for £48.95. The printer is a very important part of the system as all reports are sent to it whilst using the program.

The program is intended primarily for a small trading business, one which buys and sells manufactured goods rather than a manufacturer or a supplier of services. Thus shopkeepers, for example, are more likely to be able to make good use of the package than say estate agents. The main record keeping system is designed around the buying and selling of goods.

Company Pac 1.2.3 records the purchases and sales made by a company in the form of a sales ledger, a purchase ledger, and a nominal ledger. All of these require data in the style of an invoice, although a real invoice need not necessarily exist. The sales ledger records data concerning stock which has been sold, the purchase ledger records data about stock which has been bought. The nominal ledger combines data from the other two, along with business expenses other than stock purchase, and uses this data to calculate profit and loss sums and to set up a series of company accounts. A separate disc is required for each of these ledgers, the program reminds you which disc to use when.

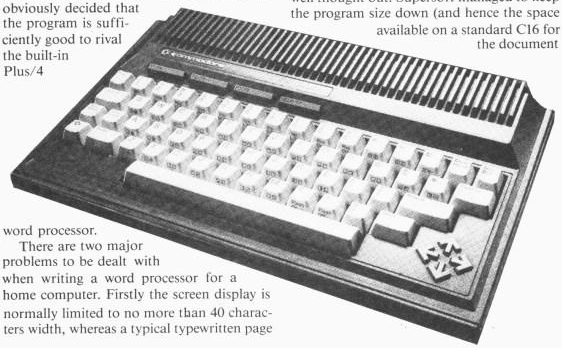
Stock control, or more correctly stock recording, uses a standard form of reach item of stock which notes not only the current stock level but also details of the normal supplier, cost price, selling price, and the current location of the stock. When items are bought or sold these forms are updated to keep a track of current stock levels.

Impex has done a very good job of producing a package which works within the limitations of the computer hardware yet which remains effective and simple to use. The documentation is organised as a tutorial, guiding the user through the program step by step giving tips for getting the best out of each of the facilities in turn. Full-blown accounting and stock control programs developed to run on the more expensive business micros often try to be all things to all men, they end up being powerful but rather cumbersome to use. Company Pac 1.2.3 has necessary restrictions on aspects such as the numbers which can be used for invoices and the way in which data must be presented to the system, but these restrictions are refreshingly explained in full rather than hidden in the usual mound of cross-talk.

Wordprocessing

The software is well thought out and well written. Screen displays are clear and uncrowded. It does not take long before you are using the package confidently and without needing to keep the manual by your side.

Word Perfect is a word processor produced for both the C16 and the Plus/4 by Supersoft. In truth Word Perfect has been developed primarily for the C16 but Supersoft have obviously decided that the program is sufficiently good to rival the built-in Plus/4 word processor.



There are two major problems to be dealt with when writing a word processor for a home computer. Firstly the screen display is normally limited to no more than 40 characters width, whereas a typical typewritten page will be 60 to 70 characters wide. This makes it very difficult to show the document which is being processed in a meaningful way. The second problem is the lack of available memory. Text uses up memory at an alarming rate and this means that the program itself must be kept as small as possible. You either end up with a word processor which is almost useless because it is too simple, or one which is almost useless because it will only process a very small document. There are of course exceptions to this trend, in the form of well thought out and useful processors, but these tend to be rare beasts.

Document

To be honest I must say that I am no more than lukewarm about Word Perfect (Just as I am best lukewarm about the 3-plus-1 word processor of the Plus/4). The program has some limitations which I was disappointed to find in a "modern" word processor. Text seems to be held as single lines of characters (much as is done in 3-plus-1). Although some clever programming allows you to ignore this fact most of the time, some of the text-editing functions work in rather strange ways. The maximum number of lines available is 254, so Plus/4 owners or C16 users with expanded memories will not be able to use the full capacities of their machines.

Word Perfect scores well in two areas: it is available now and it is, though simple, quite well thought out. Supersoft managed to keep the program size down (and hence the space available on a standard C16 for the document

up) by making the program "dumb". Thus, for example, if you insert text into the middle of an existing document you will normally have to create blank lines for the new text, enter the text, and then reformat the paragraph concerned to get rid of unwanted spaces. On a more intelligent word processor most of this would be done automatically. Although wordwrap is included, the text cannot be justified to the right to keep it tidy.

Filing

When it comes to actually using Word Perfect you can define the width of the printed document up to 160 characters and the page length as required. You can set tabs, move either margin, centre text, and change the colours used on screen. Blocks of text can be erased, moved, or copied although the blocks must be complete lines of text and some of the processes require rather a lot of key-pushing. There is even a simple search command to help you locate a particular piece of text and some vertical-scroll functions which can be used for moving columns of text. When the document has been typed in and set up in the desired format it can be saved to tape or disc, verified, and printed out. The print functions allow for non-Commodore printers and some attempt is made to give features such as text underlining and alternative typefaces, but this is only suitable for some printers.

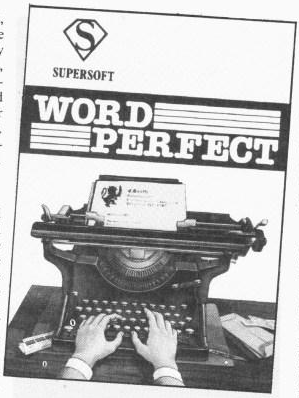
Overall I found Word Perfect quite straightforward to use and fully capable of preparing most simple documents. On the C16 you will be limited to around 2.5 printed pages of A4 Text. On the Plus/4 the available document space increases to around 5 pages of A4 text which is 2.3 times the space provided by the built-in 3-plus-1 word processor can give.

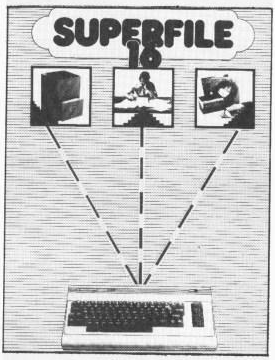
Superfile 16 from Tynesoft is aimed squarely at the C16 using the tape recorder. The program is a simple filing system for keeping records such as names and addresses or details about collections of objects. You can only have one file in memory at a time, and hence you will not be able to cross-reference information between files. What you can do is set up a file which you can sort into ascending order or which you can search for some particular feature.

Menu-driven

Somewhat surprisingly these days the program has been written in Basic, so there is the possibility of modifying the thing to use disc. Also rather surprising is a limit of 30 on the number of records which can be held in memory, memory extensions are no good to you here! Despite the Basic the program is quite simple to use and reasonably fast.

Superfile 16 is menu-driven, that is you have to select options from a series of menus. This makes the program very easy to use. Unfortunately the program, like many others, is let down by its documentation. What there is of the documentation is good, it's clear and to the point. The problem is that the manual is simply incomplete. Nowhere is the use of a printer mentioned, or the setting of screen colours, or the maximum number of records which can be set up. Trial and error indicates that although you can print recorded data but you have to print the lot, and a Commodore printer is assumed.





Music Master affords a little light relief after the rigours of accounts and word processing. The C16 and Plus/4 were criticised at first for having limited sound capabilities when compared with the C64. Much of this criticism was, in my opinion, misguided as few programs and fewer programmers ever use the C64 sound capabilities to the full because of the difficulties of programming the thing. The two voices provided on the C16 and Plus/4 are good enough for most requirements yet simple to use.

Supersoft takes things somewhat further than most with Music Maker, and shows very effectively what can be done. With the software loaded (from tape or disc) you can use the keyboard as a simple piano, making music to your heart's content, or you can use the memory to record and edit your tunes for replaying at a later date. Either of the voices can be used when playing from the keyboard, or both together to produce a richer sound. Voice 2 can additionally be used to provide a background or rhythm while you play on voice 1. Ten built-in rhythms are provided or you can write your own.

The length of tune which can be held in memory is limited to 425 notes per voice. I have not yet found a way of increasing this for use on the Plus/4. How long such a tune will last depends on the tempo selected. Tunes, or disgusting patterns of noise depending on your skill, can be saved to tape or disc. You can also, with the aid of some program listings printed in the manual, transfer tunes developed using Music Master to programs of your own.

I am no musician so I am not able to comment seriously on the technical capabilities of Music Maker, other than to say that you need to have a pretty good imagination to make the thing sound like anything but a cheap electric organ. What I can say is that I found the program easy to use and fun to play. The manual is well written and complete with plenty of helpful comments on making practical use of the program. ■

SOFTWARE: Company Pac 1.2.3
SUPPLIER: Impex Software Ltd., Metro House, Second Way, Middlesex HA9 0TY. Tel: 01-900 0999.
PRICE: £98 Disk.

SOFTWARE: Word Perfect
SUPPLIER: Supersoft, Winchester House, Canning Road, Wealdstone, Harrow, Middlesex. HA3 7SJ. Tel: 01-861 1166.
PRICE: £14.95 Disk, £12.95 Tape.

SOFTWARE: Music Master
SUPPLIER: Supersoft, Winchester House, Canning Road, Wealdstone, Harrow, Middlesex. HA3 7SJ. Tel: 01-861 1166.
PRICE: £14.95, £12.95 Tape.

SOFTWARE: Superfile 16
SUPPLIER: Tynesoft, Addison Industrial Estate, Blaydon, Tyne & Wear. NE21 4ZE.
PRICE: £9.95 Tape.

Once in a Red Moon

Intrepid adventurer ***Ken Matthews*** *tries out Level 9's latest epic and solves a few of the toughest puzzles around . . .*

THE DELAYED arrival of many promised titles over the last few months has produced a shortage of adventure software this summer. The agonised wait is now over — **Red Moon** is with us!

Level 9's first game from their new base in Weston-super-Mare is also their first "magical" adventure where the hero(ine) has 50 hit points (if they fall to zero you die) which can rapidly be lost if you choose to fight your way through the game rather than think.

As befits a magical guest, you also have the opportunity to use twelve spells, although you need the correct item with you to "channel" the supernatural forces and cast the spell successfully.

Long ago the Moon was red and magic ruled the world, but, at each eclipse, the moon was left more battered and pale from its battle with the sun. Eventually, magic failed in the daytime and time as we know it began.

In the kingdom of Baskalos though, the wizards and warlocks joined their power to form the Red Moon Crystal which was mounted in a huge tower to spread its light and preserve the last magical realm on Earth.

Despite the red glow, things were not altogether rosy in Baskalos — one day the Crystal was stolen — **Red Moon** tells the story of how a lone magician struggled to recover it and save the country . . .

The game is in many ways typical of the "new style" Level 9 with briefer location descriptions than their earlier games but with a graphic for each location and a new idea of telling you where each exit leads to, if there isn't a door in the way, which you should find very useful.

The commands are the simple two word type which are more than adequate and the "again" command is particularly useful in combat. The graphics are rapidly drawn and can be turned off if you desire to move around more quickly.

In most games you find yourself unable to visit more than a few locations without needing to solve a problem but **Red Moon** allows you to visit almost every location with a minimum of thought. Most of the rooms are empty but those that aren't are the real posers. You will need to thoroughly explore the huge map before things fall into place and you can gain the items you need to visit the elusive few locations where the treasure lies.

Treachery

The most original part of the game is the introduction of various characters, friendly, neutral and evil that may help or hinder your progress depending on your reaction to them.

Some of these will need to be fought, some entertained, but most of the toughies can be defeated by simple treachery or a little magic. Beware though, the spirits of those you kill are very restless — and more than a little peeved with you.

There are nine other treasures that you can obtain on your way to recovering the Crystal which will allow you to achieve the maximum score. some of them are magical and help you avoid combatg, find objects and detect treasure. The presence of iron interferes with casting spells and will cost you hit points — be careful because save and restore are treated as spells in **Red Moon**. Returning the Crystal to the correct place ends the game so if you are going for maximum points — don't do it.

Red Moon is enchanting — the plot is original even if the idea of hit points has been seen before — Level 9 is still the best in Britain.

To round off this month I've given in to pressure and decided to let you have a few hints and tips.

In **Zork I**, you can recover the platinum bar by either draining the reservoir behind the dam and refilling it or by simply typing ECHO in the room.

In **Zork II**, try attacking the dragon and then moving away to get a clue to his demise.

In **Zork III**, you should trust the chap who offers to help you with the chest and make sure you cover your tracks through time if you want your burglary to remain undetected.

In **Hitch-hikers Guide to the Galaxy**, you can obtain the babel fish by putting the gown on the hook, the towel over the grate, the satchel over the panel and the junk mail on the satchel before pushing the button (phew!).

In **Deadline**, try turning the calendar and shading the pad with pencil to get you a suspect (or two) and a motive.

In **Emerald Isle**, you need the armband to pass the logging machine and and the fence post to move the monument before you can find a LONG rope.

In **Mordon's Quest**, you will need to map the jungle completely and see which creature your map resembles to answer Tarzan's riddle.

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That's it for this month, next time we will be announcing the winners of the anecdote competition so if you still want to have a go — you'll have to hurry! ■

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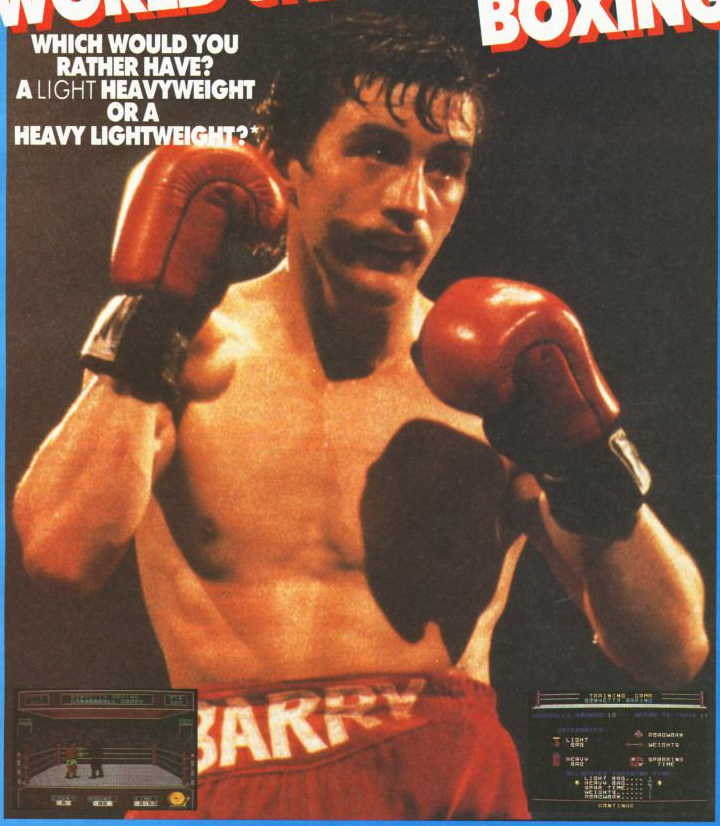

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DISC TO DISC: It is possible to make a self contained back up of disc based programs that will both **load at high speed** and **allow the rest of the disc to be used at normal**.

TAPE TO TAPE: Tape back ups can be made at turbo speed with just one tape deck.

In fact **"Freeze Frame" will FREEZE any program** that is memory resident, and allow you to make a back up of that program onto tape or disc. The beauty being that the saved version can be at fast loading single file. The process is **completely automatic**, no knowledge of BASIC or machine language is required, just follow the prompts and the simple instructions for **100% success**.

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WARNING: Don't be mislead by other adverts, if you want to transfer turbo load programs to disc, software only utilities are **inadequate**. They suffer from a variety of drawbacks including poor success rate, awkward to use, greedy on disc space and overpricing.

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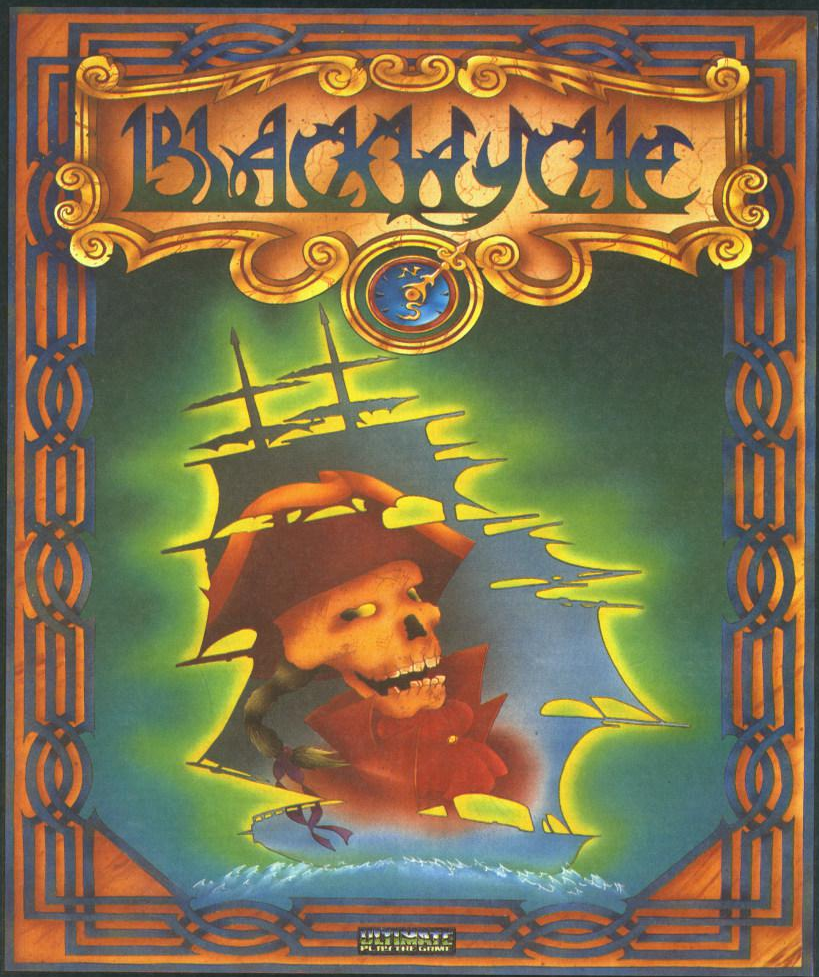

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Calling printers

I HAVE recently written a program on my 64 which uses a printer, but I am unable to stop the program from breaking if I accidentally forget to switch the printer on and then call for a printout. This means that I lose all the data in memory. Could you suggest a Basic routine to prevent this from happening?
N Steed
Hereford

A STANDARD routine to remind users to switch on their printers is as follows:
10 OPEN 4,4: POKE 154,4: SYS 65490
20 POKE 154,3: CLOSE 4: S=ST
30 IF S=0 THEN 60: REM printer is on
40 IF S=128 THEN 10: REM this corresponds to DEVICE NOT PRESENT ERROR
50 GOTO 10
60 REM program continues

The program will remain in the loop in lines 10 to 50 until the printer is switched on, when S becomes 0 and execution continues in line 60.

The Vic on screen

I HAVE BEEN experimenting with the screen display of my VIC, and have found POKEs to change the length and width, but I can only view 24 across and 26 from top to bottom. When I hit RETURN the cursor moves one space down and one back. The POKEs I have used are 36930,152 and 36931,171. Also, can you tell me if there is a way to halve the size of the characters?
D Phillips
Washington
Tyne and Wear

YOU ARE using the wrong registers of the Vic chip. The third and fourth locations are required (36866) and 36867). To increase the number of columns use the following POKEs.
POKE 36866, PEEK(36866) + 2* (number of extra columns required)
and to increase the number of rows use
POKE 36867, PEEK (36867) + 4* (number of extra rows required.

There are programs to halve the width of the characters, using a 3 × 7 matrix, and you could use a user-defined character set to halve the height as well. The problem would be that the resulting characters might not be too legible. Try Raeto West's *Programming the Vic* for more information.

Sprites abound

COULD YOU tell me if it is possible to create more than the standard eight sprites on the 64 using some kind of machine code subroutine? If this is possible, where would the new registers for position, collissions and so on be located?
P Blest
Dudley
West Mids

IT IS possible to create more than eight sprites using interrupt techniques in a machine language program. At each interrupt, all the X and Y positions are reset so that the sprite positions are all independent. The sprite enable registers are also reset to give the extra sprites. A Basic program which creates a machine code routine to display 32 sprites can be found in Raeto West's book *Programming the CBM 64.*

Without a trace?

I AM WRITING a TRACE program for the unexpanded Vic 20. It changes the IRQ interrupt vector to point to the TRACK routine and gets the current line number from locations 57 and 58, location 57 being the LSB and 58 being the MSB. How do I display the contents of both these locations as a number between 0 and 65535?
P Newbold
Abridge
Exeter

Use PRINT PEEK(57) + 256*PEEK(58) to display the current line number which is being interpreted. Check it out by using a short test program using this routine on each line. When run, you will get a list of all the line numbers in the program. Incidentally, you cannot use it in a subroutine, because you will only get the subroutine's line numbers! The same locations apply to those readers with 64s.

Designs on an 801

HAVING bought a copy of Activision's *Designer's Pencil* for my 64, I wanted to print my masterpiece on my MPS-801 printer, but on following the instructions in the manual I could only get a listing for the picture, not a copy of the picture itself. Could you help me to overcome the problem?
G Howard
Grimsby
South Humberside

There doesn't seem to be any obvious reason why the screen dump shouldn't work. The normal series of commands for The Designer's Pencil is FILE: PROGS: PRINT. Perhaps your MPS-801 cannot access graphic mode because of a fault. Try OPEN4,4: PRINT# 4, CHR$(8), followed by six CHR$ values defining the bytes making up the columns. The first part accesses graphics mode before each string of bytes (add 128 to the value first). To return to normal text mode after dumping the screen, use PRINT# 4, CHR$(15). The printer manual will give you more information about graphics mode: if the device will not work in this mode, then have it serviced.

Vic 20 sprites?

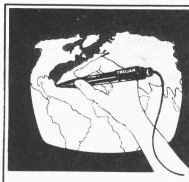
AN ANSWER to a query (albeit for a different machine) in a recent magazine suggested to me that "sprites" were possible on virtuallay any micro using interrupt routines. Can sprites be facilitated on a Vic 20?
C Robilliard
BFPO 42
W Germany

SPRITES are a feature of the VIC 2 chip, and would not be possible on other micros in the same way as on the 64. This is not to say that you could not develop a similar idea; interrupt routines can be used with user defined graphics to create moveable object blocks which simulate "sprites". But true sprites aren't possible since the hardware isn't designed to accommodate them.

Two-tone trouble

THE SOUND on my 64 is more than a tone flat. To produce a frequency of 440Hz I have to program 471Hz. Can it be tuned, and if so how? I'm using the Music Maker cartridge, so I can't just program 471Hz every time I want a concert A.
E Hundry
Gillingham
Kent

YOUR PROBLEM is in the software. Software designed in or for the US market will play at a lower pitch than that in the UK, and to produce a tuning standard note A (440 Hz) in the US the register value in the frequency control register is 440*16.404261 (= 7218) and in the UK 440*17.0309 (= 7493), hence your problem. Swapping the SID chip would only give you the wrong frequencies with UK produced software.



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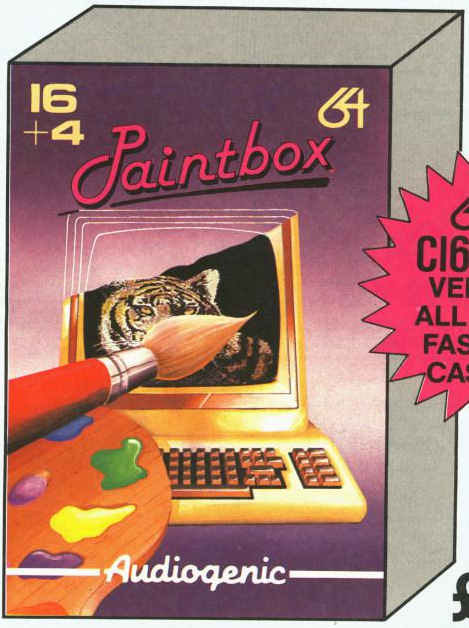

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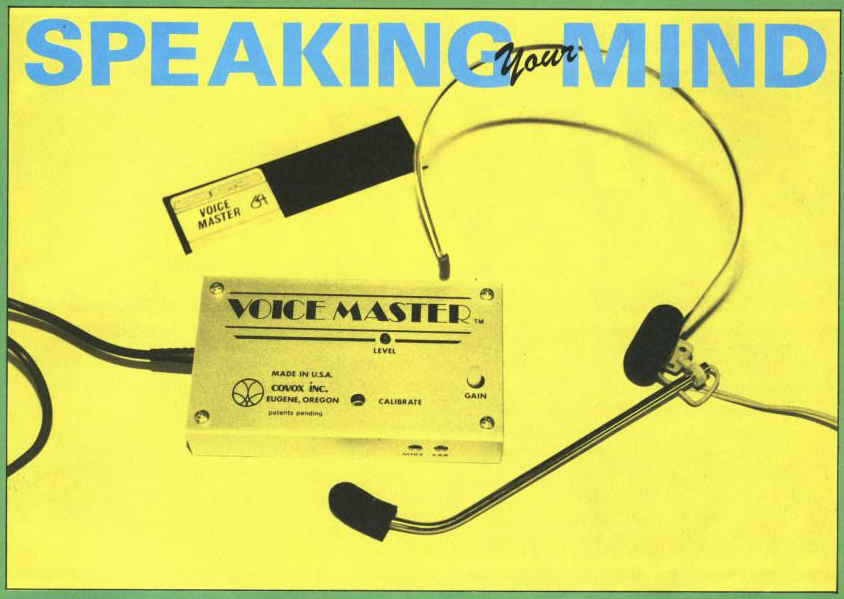


Anirog's ***Voice Master*** *is a versatile 64 add-on which allows you to record your own voice and incorporate it in Basic programs. Now you can win one of five of these boxes of tricks, with cassette and disk software, just by speaking your mind . . .*

LAST MONTH we reviewed Anirog's amazing **Voice Master** speech digitiser for the 64-this month, as promised, we're giving you the opportunity to win one of FIVE of these unique add-ons.

Voice Master, which costs £59.95 in the shops, consists of an interface unit, a headset with microphone and software on cassette and disk. Used with your 64, it enables you to

- Record the sound of your own voice, or any other sound
- Replay the sound at a variety of pitches and with special effects added
- Incorporate the sounds in your Basic program, which can be used without the Voice Master fitted
- Program your 64 to respond to speech input
- Play music on the SID chip by humming or whistling into the microphone.

The potential of the Voice Master is only limited by your imagination, and if you want to hear some of the things you can do with it, you just have to buy Anirog's games *Five-a-Side, Jump Jet* or *Out On a Limb*, all of which incorporate Voice Master effects.

All you have to do to win one of the five

Voice Masters we have on offer is to supply an appropriate, original and amusing caption to our picture of the aliens from Anirog's software evaluation department!

The five funniest captions submitted before the last working day of October will win the Voice Masters. Send your entry on a POSTCARD (or the back of a sealed envelope) to Anirog Competition, Commodore Horizons, 12/13 Little Newport Street, London WC2H 7PP, not forgetting to add your name and address. Normal competition rules apply; winners will be announced in the December issue.

Previous winners

The winners of the BOX competition in the August issue are C Ward of Symondham, J A Tunstall of Hartlepool and J Kaliciak of Leeds. Each will receive a Prototronics BOX home robotics interface.

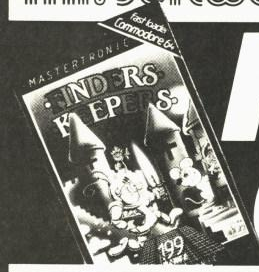
★

The winner of the Graham Gooch autographed cricket bat and Audiogenic Test Cricket game is Robert Lee of Ilford. Three runners-up get autographed copies of the game; M Cursons of Hornchurch, D Wilson of Northwich and M Sutton of Tamworth. Twenty consolation prizes of copies of the game go to D Constable, Bedford; S J G Reeves, Birmingham; J Pickard, Deeside; I Melding, Wigan; B Sanders, Rushden; M A Cooper, Hemel Hempstead; C Lucas, Barwell; S Brady, Enfield; A Kelly, Workington; C Proud, Huntington; D Edwards, Streetly; R Flammiger, Cheam; S Bradley, Runcorn; N Curtis, Maidstone; S Wormald, Sowerby; N Hood, Dereham; D N Wall, Yoxall; T Brown, Galashiels; M Davies, Llandeilo; T Hadland, Henley. Graham Gooch's Test Cricket is now also available on disk at £11.95, retaining all the features of the original cassette version.

★

The winner of the Brother HR5-C printer in our July contest was Andrew Tebbutt of Birmingham.

Mr. Software



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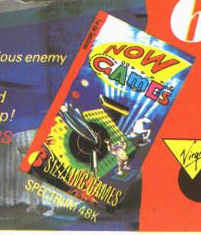

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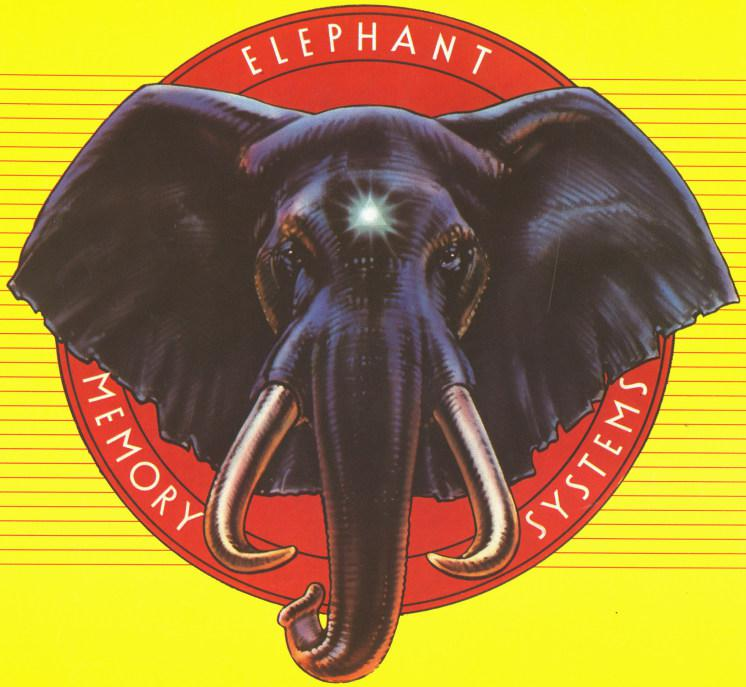

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